

ITEMS OF INTEREST.

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Thoughts from the Profession.

LABORATORY HINTS.

Care of Impression Cups.—What can be more disgusting to a refined lady than to have a dentist introduce into her mouth an old battered, dirty impression cup; loaded with twice as much plaster as is necessary?

I have worked with several dentists who would always slip up behind their "victim" and manage (if possible) to sneak the cup into their mouth without letting the patient see it. The cups can be kept just as clean and smooth as when they came from the depot; but, to do this, it is very important they should be kept free from dents, scratches, and bruises. When altering the shape of a cup to fit some peculiar mouth, do not hammer it or use pliers, as any change can be easily made with the fingers. When pouring the cast, do not tap the bottom of the cup with the spatula, or any thing that will jam it; get a rubber face door bumper, screw it into the plaster bench, and tap the bottom of the cup on this. As soon as the impression is removed from the cup, wash off thoroughly with a stiff brush, sapolio soap, and soft water; wipe dry, then wipe over with silver-cleaning rouge, mixed to a paste with water, take it to the lathe and hold it on the cotton wheel a few minutes to bring out the polish.

Making Corundum Wheels.—It is a simple matter for a dentist to make his own corundum wheels, and, by so doing, have a fine assortment of wheels at a small cost. Patterns will be needed for the different sizes; these patterns can be turned out of soft wood; be sure they are true, and have them smooth; to prepare them for molding, dip them into hot, melted paraffine, let them cool, and

polish with a piece of chamois skin. To make the mold, place the pattern on a piece of plate-glass, put a rim of cardboard around it, deep enough to reach one-half inch above the pattern, and large enough to clear it an inch on all sides ; with sticky wax secure this rim tightly to the glass, then mix plaster to about the consistency of cream, hold the glass by one corner in the left-hand ; with the right pour the plaster slowly into the opposite corner, shaking down gradually toward the left-hand ; this should be done carefully, to get a perfect mold. When the plaster sets, turn it over, remove the glass and pattern, dry the mold, and it is ready for use. Melt over a slow fire half-pound of shellac ; when thoroughly melted and mixed, add four pounds of corundum, fine, medium, or coarse, as you desire the wheel ; stir until the corundum is evenly distributed through the shellac ; pour into the plaster mold till as full as it will hold ; then take the piece of plate-glass, which should be warmed and smoked on one side, press it, smoked side down, on the mold, forcing out all surplus material, place a weight on the glass, and let stand till cold.

To True Corundum Wheels.—The following is old, but I think it might be new to some of the younger readers of the *ITEMS*: When wheels have become hollowed or dished on one side, place them, this side down, on a piece of *plate-glass*, then hold the piece of glass over a lamp so the heat will strike the glass under the center of the wheel. When the wheel has softened so it will settle smoothly to the glass, remove the glass from the heat and put it in a cool place, where the wheel will set quickly. This work must be done very carefully so the wheel will not overheat and run out of shape.

Wm. H. Steele, Forest City, Iowa.

WORK OF THE NATIONAL FACULTIES.

The following are resolutions of the National Association of Dental Faculties :

Resolved, That a preliminary examination be required for entrance to our dental colleges. Such requirements shall include a good English education. Any applicant failing to pass a satisfactory preliminary examination, the other colleges of this association may be informed of the fact. (Saratoga, 1884 ; Chicago, 1885.)

Resolved, That a candidate for matriculation who presents a diploma from a reputable literary institution, or other satisfactory evidence of literary qualifications, shall be admitted without further examination. (Saratoga, 1884 ; Chicago, 1885.)

Resolved, That after the session of 1890-91 a diploma from a reputable medical college shall entitle its holder to enter the second course in dental

colleges of this association, but he may be excused from attendance on lectures and examinations on the following subjects: General anatomy, chemistry, physiology, materia medica and therapeutics. (Excelsior, 1890.)

Resolved, That the colleges of this association may receive into the junior or senior classes only such students as hold certificates of having passed a satisfactory examination in the studies of the freshman or of junior years respectively; this certificate to be a pledge to any college to which they may apply that a previous year has been properly spent in the institution. (Chicago, 1885; changed, Saratoga, 1891.)

Resolved, That applicants for admission to advanced standing from foreign countries shall be required to furnish properly attested evidence of study, attendance on lectures, etc., the same as required of applicants here; and they shall pass the intermediate examination. (Chicago, 1885; changed, Saratoga, 1891.)

Resolved, That candidates for admission to the colleges of this association, who are undergraduates in a reputable medical college, may be admitted to the junior class subject to the rules of examination governing admission to that class.

Resolved, That no college shall give credit for full term to any student who has entered later than twenty days after the beginning of regular lectures. (Chicago, 1885.)

Resolved, That the dean of each school shall on request furnish the executive committee with the exact character of the intermediate examination held in his school, and whether or not the examination is final. (Niagara 1886; changed, Saratoga, 1891.)

Resolved, That no college of this association shall admit a student after twenty days from beginning of regular term, except those colleges having a term of more than five months, and that they shall have an extension of time in proportion to the length of term. (Niagara, 1886.)

Resolved, That attendance on three full regular courses of not less than five months each, in separate years, shall be required before examination for graduation. (Saratoga, 1889.)

GENERAL.

Resolved, That the fees of all dental colleges, as far as possible, be uniform. (Chicago, 1885.)

Resolved, That the members of any faculty belonging to this association may take part in its discussions, but only the delegated representatives shall vote on a question before the association. (Niagara, 1886.)

Resolved, That dental schools which do not conform to the regulations of this association shall not be recognized by the association. (Niagara, 1886.)

Resolved, That a standing committee on schools be elected, whose duty it shall be to ascertain as far as practicable the workings of all dental schools in this country and Europe, and be required to furnish information to the dean or secretary of any college when desired, and to report in writing at each meeting of this association. (Niagara, 1886.)

Resolved, That we agree to adopt a graded course of instruction and an intermediate examination between each course, which course of instruction and examination shall be conducted as the faculties of the different colleges

represented in this association may deem proper. (Saratoga, 1884 ; changed, Saratoga, 1891.)

Resolved, That no charges against any faculty shall be reported to the association by any committee before both parties interested have been notified, and an opportunity given for a hearing before said committee. (Washington, 1887.)

Resolved, That, as a matter of courtesy, when a student leaves one school to go to another, the dean of the second college shall write to the dean of the first college inquiring whether there may be any objections to the transfer ; this to be done whether the student presents a certificate or not. (Louisville, 1888 ; changed, Saratoga, 1891.)

Resolved, That hereafter a delegate representing a college in this association shall be a member of a teaching faculty, and shall present credentials from the college to which he belongs, legally authorizing him to represent his college, before he shall be entitled to vote. (Louisville, 1888.)

Resolved, That it shall be obligatory on the dental schools belonging to this association to publish the names of all their matriculates and graduates of the preceding session, with the states and countries from which they come, in their regular annual announcement, and that an asterisk (*) accompany the name of each person not in attendance, and the words "not in attendance" be placed as an explanatory foot-note at the bottom of the page.

Resolved, That the degree of Doctor of Dental Surgery shall not be conferred by any college belonging to this association honorarily, except by the consent of this association. (Saratoga, 1889.)

Resolved, That the term anatomy shall be interpreted to include didactic and practical anatomy, and that in the latter at least two parts of the cadaver shall be dissected in some regularly appointed anatomical department. (Excelsior, 1890.)

Resolved, That we recommend that students take two full courses in studies of a general character, such as anatomy, physiology, chemistry, general principles of surgery, materia medica, and therapeutics, and three courses in those of a special dental character. (Excelsior, 1890.)

Recommended, That for a full course of lectures the minimum sum of college fees be \$100.00. That diploma fees may be omitted, and an examination fee of not less than \$25.00 be substituted therefor and made non-returnable ; that a matriculation fee of \$5.00 be charged annually. Special-course fees to be \$10.00 for each branch taken, and \$5.00 matriculation fee.

Resolved, That after the session of 1892-93, four years in the study of dentistry be required before graduation.

After a long discussion, the New Jersey State Teachers' Association, at Asbury Park, unanimously condemned the use of tobacco, and particularly the cigarette habit among youth. "It irritates their nervous system, impairs their lung power, is bad for their digestion, is baneful to their brain, and gives an offensive taint to their breath."

EROSION.

In New Jersey Society.

Dr. W. H. Trueman: Abrasion, erosion, and caries are three peculiar and distinctive processes by which is wrought, through a progressive and gradual loss of tissue, the destruction of the human teeth. They differ in their etiology, probably, as widely as they do in appearance and general characteristics, and yet they seem to be, in many cases, so linked, and to follow each other so closely, it is difficult to assign the injury done to either factor alone. The injury may be purely a mechanical abrasion, or it may be erosion or caries exists alone, and the appearances presented are characteristic and unmistakably those of the destructive process concerned.

In looking over the literature of this subject, I find several papers on erosion devoted almost exclusively to the various forms of receding gums and sensitive dentine associated. I cannot conceive that they have anything in common. Erosion may exist at the necks of teeth, and frequently does, where the gums are quite normal. I have at times found it entirely below the gum-line, with the gum-tissue normally adherent at the lower margin of, and completely covering, the eroded cavity. While there is usually associated with it, owing to the loss of tissue, an abnormal sensitiveness of the teeth, this is not constant; and, on the other hand, there may be extensive recession of the gum and excessive sensitiveness of the exposed necks of the teeth without the slightest erosion. While these several conditions may jointly exist, they are not inseparably associated, but are, in origin and history, distinctive and independent abnormal conditions.

Abrasion, which in appearance so nearly simulates, and which is so often confounded with, erosion, is a purely mechanical removal of tooth-tissue. Its effects are seen more frequently on the cutting and masticating surfaces; it is, indeed, the natural process by which the cutting edges of the incisors are, after their eruption, wrought to their normal shape, and by which the masticating surfaces of the bicusps and molars are made to closely articulate. The tissue thus removed, when the dental development is quite normal, is exceedingly small; and though this abrasion ordinarily progresses slowly yet steadily as the years roll on, it does not usually, when confined to these surfaces, entail any serious complications. While its effects are most marked on the masticating, they are seen in a less degree on the proximal surfaces of all the teeth that are in close contact, especially in the middle and later periods of life, when

the teeth are apt to become less rigid in their positions. It is here, too, that it is apt to be complicated with erosion and caries, and is largely responsible for proximal cavities developed at this time in dentures that heretofore have been sound. At this period of life there is usually a natural and normal consolidation or shrinkage; frequently, indeed, an abnormal recession of gum-tissue, that leaves between the teeth spaces favoring the lodgment of effete matter, or in which the oral secretions are in various ways retained and there undergo a change that renders them destructive of tooth-tissue. This leads sometimes to caries. This is most frequently observed in, but is not confined to, the posterior teeth. As this observed fact has an important bearing on our subject, let us examine it a little more closely, confining our attention to the molar teeth.

The proximal surfaces of well-formed molars are so rounded they present but little surface in contact, this and the gum-tissue closely filling the space below the line of contact, prevents the undisturbed accumulation of effete matter. By the process of abrasion, these rounded surfaces are flattened, and those in contact are thereby enlarged; this, and the recession of gum-tissue, favors the retention of oral secretions, etc., and the process of erosion begins. This continues slowly till, by loss of tissue, a comparatively large space is formed. This space usually assumes on each tooth a concave form, and is thus better fitted to collect and retain fermentable matter, and favors the location of tooth-destroying germs which augment and continue the destructive process. This loss of tissue by erosion may quickly open on either tooth a structural defect that furnishes these germs a place for lodgment, and we have quickly formed a large and penetrating cavity. I am well satisfied this is substantially the history of many proximal cavities that develop in the later periods of life, and that in their formation each of these three destructive processes—abrasion, erosion, and caries—plays a part.

The distinctive characteristics of erosion and the marked dissimilarity between it and caries, both in appearance and origin, were early noted, and its varied modifications accurately described; but beyond suggesting it was a real and actual solution of tooth-tissue, few writers ventured to account for its presence. But a little observation demonstrated positively that it had a widely-differing origin from abrasion, which in physical characteristics it so closely resembled. While generally admitting it was a solution of tooth-tissue, that the destructive agent was an acid, the question arose, Why should its destructive action be so sharply localized, and why should it exhibit throughout its course rigid and sharply-defined

lines? These questions have always been the stumbling-blocks in the way of a tenable theory.

Investigation is often hampered by preconceived notions. Solution is not necessarily a chemical process. The idea that this destructive agent must be an acid having an affinity with the lime-salts of the tooth has little but tradition to support it. The little cap that we frequently see, mainly of enamel, all that remains of a baby molar, is sufficient evidence that there may be, and is, formed in the oral cavity a true solvent of tooth-tissue. I know this effect has been produced by a normal physiological process; it is, however, none the less a true solution. The study of caries was greatly hindered by the general acceptance of the idea that it must be a chemical change, and much energy and time was wasted in the effort to isolate the acid capable of so peculiarly acting on tooth-tissue. The process of digestion may, in this connection, be suggestive. The changes the food undergoes in a well-ordered stomach are, to a greater extent physical than chemical, and are caused far more by the active agent there secreted than to the acid associated with it. If we can settle the point that the cause of erosion is a strictly local one, that it is not caused by a peculiar secretion, but to a change in a small and isolated portion of the normal oral secretion, its mechanism and chemistry will be much simplified, and we can utilize in its study the knowledge acquired by recent investigations of the changes constantly going on within the oral cavity, largely the result of microbic energy.

Erosion and abrasion are extremely simple, governed by a law of chemical action, and there is really but trifling difference between the two conditions. Abrasion is caused, necessarily and primarily, by attrition with antagonizing teeth, and aided, possibly, in all cases, by acid action. Erosion is the result, unquestionably, of chemical solution and the added effect of wear of lips and particles of food. It is impossible to separate these two conditions.

It is true, abrasion may occur through long attrition in mastication, and the acid action is so insidious it is, ordinarily, not considered as a factor in the destruction. It is, therefore, fair to conclude we have two processes at work—one, the wearing away by attrition, and the other softening the dental structure by acids.

When erosion proper is considered, the labial and buccal surfaces, usually of the superior teeth, are destroyed, presenting peculiar manifestations of destructive action. The result is, however, not much different from that which occurs on the masticating surface through abrasion, and I cannot possibly draw a line between these two pathological processes.

Teeth thus acted on are extremely dense teeth. It does not happen in early childhood, but is observed after the individual has reached maturity and the teeth have become dense.

The process which operates to produce caries on the labial surfaces of the upper incisors in a child is the same in kind modified by age and conditions. In a child of eight to fifteen, it rapidly progresses to so-called "white decay," as the influences, at this period, are on an entirely different structure incapable of similar manifestations to that of teeth at fifty.

Caries and erosion must be broadly distinguished from each other, as they have only a moderate degree of similarity. Erosion is a chemical action on the tooth-structure, while caries, though produced by chemical solution, has other factors entering into combination to produce destructive results. The fact that a slight irritation, as the wearing down of the anterior teeth, produces an extra development of tissue, is well known. This led me long ago to believe slight irritation produced increased development of tissue, and that over-excitation produced destruction.

It is one thing to furnish a clue to the solution of a vexed problem, and quite another thing to make subsequent investigations from the foundation laid. The question of erosion is one that has interested me for a series of years, as it was one of the problems for which no explanation had been given.

From a long series of tests and examinations, I had found that the secretions of the mouth during the daytime generally gave a neutral response. From that result I came to the conclusion that this question to be solved required more extended examination, and in different directions. Recognizing the fact that the secretions giving a neutral response were in a condition to rapidly change to acid under proper surroundings, the effort was made to discover when and where this was likely to occur. The fact that secretions in localities where but slight motion of fluids were present generally presented a slight acid reaction, led to the hypothesis that possibly the fluids of the mouth at night might be found to be increasingly acid. The difficulty of making any extended investigations here was apparent; but the work was begun on my own person. The oral secretions were carefully tested during the day without result. A further test immediately on awakening gave a marked acid reaction. This was so clear and positive that it naturally pointed to the cause of erosion. This was followed by other tests in mouths affected by erosion, and in young mouths with affected labial surfaces, till the evidence accumulated and was of such a pronounced character I did not pretend to doubt that the largest

amount of destruction of teeth through caries and erosion occurred at night. From these initial observations others took up the subject, and my class of students aided me materially by corroborative results. Since that period a few others have become interested, and have, as in the case of my friend Dr. Kirk, carried the solution of the problem a step further.

Now, a word as to treatment. That, necessarily, must be very simple, an antacid being all that is required in connection with constant care as to cleanliness. This very simplicity causes some to reject it. If I am correct in my conclusions, an agent must be sought for that will neutralize acidity for the period named during sleep, and there is nothing better, in my opinion, than one of the forms of prepared chalk. The advantage of this is, that it will remain on the teeth longer than other agents if applied in a thick magma. This course I have invariably adopted in young children, where there is a tendency to destruction of labial surfaces through green stain or direct action of acid, and with most satisfactory results. There is sometimes a tendency to gastric disturbance if too long continued; but this is readily recognized, and the treatment intermitted. The same course must be followed in erosion in both cases, remembering that mere day treatment will be of no value, but that the teeth must be carefully attended to during the twenty-four hours if good results are to be secured.

I have a case now under care, the most serious presentation of erosion it has been my privilege to examine, as it involves all the anterior teeth to fully half their depth in an antero-posterior direction. I saw the case some six years ago for the first time. Filling was out of the question, so I placed him under the treatment described, and he has faithfully followed it without, as far as I can observe, any further loss of tooth-tissue.

To my mind, the evidence is sufficient, and we must look for the cause of erosion in the change of the secretions of the mouth, that it is altogether chemical, and the high polish is the result of the combined action of the lips, the passing of fluid and particles of food.

Professor Pierce: I listened to the paper of Dr. William H. Truman with a great deal of interest, and was glad to follow him in his distinctions as he commenced to read the paper, and was sorry afterward that he lost that distinction and blended the conditions. We sometimes can learn from the lower animals, and those of you who are familiar with the mouth of a horse know very well that the incisors have deep depressions in the center, and we judge of the age of the animal as those teeth wear, and at a certain age all the

concave space is blotted out by attrition or worn away. That is a very admirable illustration of what I should call abrasion, and it is exactly the thing which takes place in the human mouth during a period of years where, by the mastication of food, the teeth are abraded or worn down. That may or may not be influenced by the secretions of the mouth. It takes place without any acid secretions in a thoroughly neutral or alkaline mouth. Again, we meet with depressions or grooves on the neck of the tooth where the gum has receded and the brush in cleansing comes in contact with the cementum; this is a case of abrasion with or without the acid, simply the result of the friction of a brush on that soft tissue. This is what I call abrasion and not erosion.

Professor James Truman: How do you know a brush produced the grooves?

Professor Pierce: In this case I know for this reason: I said to the patient, "You use your brush vigorously and you brush around the mouth, for on the right-hand side of the mouth the teeth are worn considerably, and on the other side not so much; there the grooves are very slight indeed." There is always a difference in the condition of such mouths on the right and left-hand sides, because the patient uses the brush more vigorously with the right-hand, though, if the patient is left-handed, we have the deeper grooves on the other side. I draw these conclusions from the fact that the grooves, where they have been produced by the use of the brush, have been found in that condition. And then there may or may not be some acid process. Therefore I call that abrasion.

I have said we have the incisors worn off by abrasion. Let us follow that a little further, and we may have a case where that destruction has gone on so far that when the teeth are closed there is a space between the incisors that the handle of a tooth-brush could be placed in. If the papille on the tongue are tested in the morning, we will invariably find an acid condition. Now let us take the crescent-shaped spaces that we so frequently see on the incisors. This may extend two-thirds of the way across the surface of the tooth, and may be in depth the sixteenth of an inch. These crescent-shaped spaces arise from acid secretions in glands in the lips, and this acidity is caused by a condition of the glands because, where we notice these cavities, we invariably find the patient belongs to a gouty diathesis. I do not say that in all persons belonging to a gouty diathesis such conditions will always be produced. I have examined the mouths of three young ladies who have the spaces described, all of whom belong to a gouty diathesis, and one is so troubled by it that she is oftentimes confined to her room from

the effect of this inherited condition. The other two are entirely free from this disease, but their teeth are nevertheless covered with the crescent-shaped spaces, and I have lined the entire surface of some of the teeth with gold, while on others not more than one-third of the labial surface of the tooth is gone. Sometimes I have taken litmus paper and laid it over the tooth and ascertained the locality as nearly as possible, and then have pinched those glands with my small pliers, irritated them, and applied carbolic acid and iodine, and have quite modified the effect. I am satisfied the destruction is caused by a malcondition of the glands in that locality, and that, oftentimes, is quite limited.

I fully concur in the statements of Professor Truman regarding the acid effect. It may be asked whether it is a decay. It is a destruction from an acid condition; it is not caries, because the abrasion of the lip has kept it smooth, and we do not have any accumulation of the organic matter there; that has been swept away with the brush or by the friction of the lips, and yet we have all the results of the acid, and we should have absolute caries were it not for the friction of the brush and the lip, which continually removes the organic matter.

One word, however, as to a point made in Dr. William Truman's paper. He spoke of the friction, which he called attrition, between the bicuspid and molars in the teeth of people advanced in years, and thought that it was the cause of a caries which is observed often to attack the teeth after a period of fifteen or twenty years of entire absence of decay, and is more pronounced between fifty-five and sixty years of age. We are all familiar with the fact that we may have caries in early life, then a period of little or no destruction of tissue, and then, at the age mentioned, the surface of the tooth is attacked, and the destruction goes on rapidly. I do not believe friction has anything to do with the progress of decay in that locality. I believe it is caused entirely by the natural wasting of tissue and a waning of the continuity which has formerly existed between the organic and inorganic matter of the tooth, and from the fact of the change of organic structure in advancing years the lime-walls are rapidly dissolved and carried away, and thus we have the loss of tissue manifested.

How to reach the masses, how to elevate them to a proper appreciation of the efforts put forth by the dental profession for the correction of evils resulting from perverted nature and their own carelessness and ignorance concerning dental subjects, is a question worthy of our attention.

Dr. J. A. Osmun.

A LOCAL ANESTHETIC.

I have learned from one of the prominent specialists of our city that he was using a preparation of cocaine with which he was getting much more satisfactory results than when using cocaine alone. He assured me he had never seen a case of constitutional disturbance since he had been using it, nor any other unpleasant results. This gave me new hope, and under the promise of secrecy I secured his formula, and commenced at once to use it. I have injected the solution sixty times, without a case of constitutional disturbance, or the least unpleasant results.

I have permission of the gentleman now to give the formula.

Cocaine hydrochlorate.....	gr. 20.
Sulphate of atropia.....	gr. $\frac{1}{16}$.
Carbolic acid, crystals.....	gr. 10.
Chloral hydrate.....	gr. 5.
Add one ounce pure water.	

Use hypodermically.

You will naturally inquire why the addition of the atropia, carbolic acid and chloral makes the use of cocaine less objectionable. I will try to explain: 1. Atropia, in small doses, such as you give in hypodermic injections from this preparation, is a cardiac, respiratory and spinal stimulant, which tends to counteract the toxic effects of the cocaine. 2. Carbolic acid aids the chloral in localizing the anesthesia, and both tend to increase the anesthetic properties of the cocaine and localize the effects, and both aid in the preservation of the solution, which is, of itself, quite desirable, as the ordinary cocaine mixture is almost worthless at the end of a week, while this preparation is good for months.

In extracting, my plan is as follows: 1. Fill the barrel of the hypodermic syringe with the fluid, then adjust the needle and make sufficient pressure on the piston of the syringe to force a few drops through the needle. By this means you obviate the danger of injecting air into the tissues. Begin at the margin of the gum on the labial side, introduce the point of the needle, and gently push it into the gum tissue on a line with the roots as nearly as possible, and when a depth has been reached nearly corresponding with the length of the roots, the needle should be slightly withdrawn to produce a small space or pocket, into which five or ten drops of the fluid should be forced. Before the needle is withdrawn, a slight pressure should be made on the gum opposite the point of the needle. This scatters the cocaine and hastens its absorption by the

alveolus. A similar injection should then be made on the lingual side of the tooth. If, in withdrawing the needle, any portion of the fluid should escape, the patient should be directed to rinse his mouth. I usually wait about five minutes after injecting the gums before extracting.

The amount of cocaine injected varies from one-half to two and one-quarter grains. If there is a number of teeth to extract, and conditions favorable, I do not hesitate to use a second syringe full of the fluid, or a total of sixty minims; but this is the limit; I never go beyond it. The extraction of the teeth of course liberates a large part of the cocaine, hence, more of it may be used for this purpose than where there is to be no bleeding. Should you get toxic effects with this preparation, administer a stimulant; one of the best is dilute alcohol.

I have heretofore spoken of the use of cocaine for extracting only, but it is quite as valuable in the operating room as at the extracting chair. In making deep buccal or proximal fillings, you can save much of the pain, as well as win the confidence of your patient, by injecting the gum with a few drops of cocaine before adjusting the dam. It is also invaluable in the treatment of pyorrhea, and other inflamed conditions of the gums about the necks of the teeth. This, intelligently used, will rob dentistry of half of its terrors, and win the grateful commendation and esteem of your patients. Dr. Guibor says that he has never seen a case of constitutional disturbance, at any time, from using this remedy. His rooms are filled almost all the time. He is a specialist in the treatment of the nose and throat; has quite a reputation among us; spent thirty years in the practice of medicine, and then took up this specialty; uses it much oftener than I ever have, and has found it to act charmingly.

— *Western Dental Journal*.

TEETH OF LOWER ANIMALS.

The lobsters and crabs have stomacholiths or teeth in the gizzard. The annelids or worms have jaws like teeth, which are merely covered with chitten, like the horny covering of insects. The leech has three semi-lunar serrated teeth or jaws, which are worked by strong muscles. In the echinoderms, or sea urchins, the first true teeth are found. They are of calcareous structure, and are implanted in true alveoli. The entire apparatus is called "Aristotle's lantern," and is often cast up by the sea. It is a sort of pyramid of the five teeth and alveoli with the points projecting

at one place for cutting or boring. The mollusks, the Gasterpods, as the common snail, have an organ called the odontophore, a strap-like structure studded with teeth of wonderful variety of shapes and sizes in different species, which is worked backward and forward for sawing and cutting vegetable food.

The lowest class of the vertebrates is the fishes, in which we find a great variety of teeth. The lowest form is that of mere dermal denticles or modified scales, for the purposes of prehension. Indeed, so closely are scales and teeth related in fishes, that some sharks have well-developed dentine in the structure of the scales, and the path of transition from scales to teeth is well marked and plain. We learn from this that all teeth in all animals are dermal structures, and that they are modified and developed for the purposes of prehension and mastication. In the fishes, we find all varieties of attachment of the teeth, that is, by membrane, as in the sharks, the hinged form, the anchylosed (without socket), and the socketed form of attachment, which is that of the higher vertebrates.

A few fishes have no teeth, others mere plates of dentine, others a pavement of teeth, others fine hair-like, flexible teeth, and others but a single fang. The teleostei, or true osseous fishes, have teeth which are ankylosed to any of the bones of the head, or attached to its cartilages. They are numerous, and are long, conical and sharp, and tipped with enamel. The common pike is a good example, for its mouth is crowded with sharply-pointed teeth, curving backward, to hold the struggling prey. The sharks have the jaws armed with rows of recurved teeth, which are attached to a sliding membrane in concentric rows, and rise up as the membrane carries them up over the edge of the jaw, and are renewed as lost. They are of triangular shape in the sharks, and of pavement form in the rays, a related species. But there is such an endless variety of forms of teeth among fishes as to defy enumeration in a brief space.

In the next higher class, the reptilia, we find the variety much reduced. In the lowest form, the batrachians, the tadpole has only horny sheaths on its jaws, like the turtles, and the frog acquires teeth only at the metamorphosis. The batrachians have, as a rule, a double row of conical teeth in the upper jaw, between which a single lower row passes. But the frog has teeth only in the lower jaw, and the toads rarely have visible teeth. The teeth of the newts and salamanders have but mere tips of enamel, and are bifurcated at the point. Some of the batrachia have teeth on the vomer also, and perhaps other bones of the head, but the true reptiles have the teeth confined to the jaws only.

In the first order of the reptiles proper, the crocodiles and alligators, the jaws are studded with conical teeth, averaging about thirty in number, composed of dentine with a thin covering of cement. They are lodged in sockets, and are constantly renewed beneath, so that they grow in nests in the jaw, and are constantly renewed.

The lizards have simple teeth on margins of the jaws, and are attached by ankylosis. They may be sharp and conical or serrated, or blunt or rounded. Sometimes they have cuspidate crowns, and approach the mammalian forms; and there are, besides, many curious shapes of teeth in this order.

The turtles have mere horny sheaths on the edges of the jaws, like birds, but have no true teeth.

The ophidia, the snakes, have a loosely-articulated lower jaw, which can be disjointed and the mouth expanded for the deglutition of disproportionately large objects. The teeth are simple, conical and recurved, for holding and creeping up on struggling prey. The poisonous species have two poison fangs in the upper jaw, which are connected with the poison bags, and are formed into tubes for injecting the poison. The poison fangs are sometimes hinged, and are raised by the opening of the mouth when the strike is made, as in the rattlesnake, or are solidly ankylosed, as in the cobra.

On advancing to the mammals, we find the most interesting and diversified forms of teeth, and their study is of especial value, as this class includes man, and the teeth of this class are consequently related to his own.

The very lowest order of mammals, however, which includes the duck bill, mole, or inthorhynchaus, anechidna, and ant-eater, we find no teeth proper, but only horny masses covering the jaws. These approach true teeth in form, but differ widely from them in structure.

The next order, the marsupials, includes the animals which transfer the immature young to an abdominal pouch for gestation and lactation, such as the kangaroo and opossum. They have teeth which approach the herb-eating, or herbivorous form. Some of them, as the opossum, are flesh-eating, or carnivorous, and herb and flesh-eating, or omnivorous, and others are insectivorous. They sometimes have long canines and well-developed premolars and molars, the latter being triangular in the opossum. The wombat has rodent incisors.

In the whales the teeth vary considerably. The baleen-whale has no true teeth, but instead rows of whalebone, or baleen, hanging from the upper jaw, filling the mouth with fringes, with which it

strains small sea animals from the water. The sperm-whale has several large conical, rounded, obtuse teeth in the lower jaw. The porpoise has numerous teeth in both jaws. The grampus has a formidable dentition of lanciform teeth, which interlock, fixed in deep sockets. The dolphin has numerous teeth, sometimes reaching two hundred, arranged in equal rows above and below, and are long, slender and conical. The dugong has two tusks set in the end of the upper jaw, which is bent over to hold them. The narwhal has a long, twisted tusk, which projects forward from the strong jaw, sometimes to the length of three feet.

The bruta, including the armadillos, sloths, ant-eaters, etc., have a low grade of organization. The teeth are of a peculiar coarse structure and round form, with wedge-shaped, grinding face, and without enamel. The teeth are all molars in position. These animals usually have but one set of teeth, and are called, in consequence, monophyodonts, as opposed to other animals which have two sets, deciduous and permanent, and are called diphyodonts.

The insectivora includes the shrews, hedgehogs, moles, and other insect-eating animals. They have numerous teeth, with long, sharp cusps for crushing the chitinous covering of insects. The teeth are well covered with hard enamel.

The cheiroptera includes the bats, those curious flying animals. Some of them are insectivorous in habit, and have teeth adapted to such diet. The vampires are blood-suckers, and have very long, sharp incisors, adapted to piercing the skin of animals. The frugivorous bats have a reduced dentition, with blunt, rounded cusps.

The rodents includes all animals which have two long chisel-shaped incisors, above and below, for cutting hard substances, such as the beaver, rabbits, rats, squirrels, etc. The enamel is so disposed on these teeth that it is thickest on the front and thinnest behind, so that use wears the tooth off fastest behind, and the end slopes to a sharp edge in front, thus preserving a constantly sharp edge for cutting. These teeth are continuously growing from persistent pulps, and require to be kept worn short by use, or they will grow and curve around in a circle, thus preventing feeding and causing death by starvation. There are usually no other teeth in the rodents but these incisors and true molars. These latter are herbivorous in form, except in some of the omnivorous species, as the rats, when they are cuspidate. This order contains more species than any other order of animals.

The carnivora includes the flesh-eaters—cats, dogs, bears, etc., and the teeth are highly specialized. The canines are long and pointed, for tearing flesh, the premolars have the cusps raised into

cutting blades for dividing flesh, and the few true molars have mere blades and spurs. The jaws have but one, the vertical motion, opening and shutting, without lateral movement, so that the blades of the teeth pass each other like the blades of scissors. The flesh is merely divided, there being no mastication necessary in that kind of diet. The feline, the cats, including the lion, tiger, etc., are the most highly specials of the carnivora. The dentition of the dog is reduced somewhat from the purely carnivorous type of the cats, and the teeth are more tuberculate, as better adapted to his more omnivorous diet. This is the type of the dog, wolf, fox, etc., and they have one additional molar. The bears have a still more omnivorous dentition, and the teeth are yet more tuberculate. The ruminants are the first of the true herbivorous animals, those which chew the cud, or ruminate, including the cow, sheep, deer, etc. They have no incisors, or canines, in the upper jaw, and the long, cutting incisors of the lower jaw impinge directly against the cartilaginous gum above. There are a few exceptions to this rule, as in the musk deer, the male of which has long canines projecting from the upper jaw; and the camel, also, has long, projecting canines.

The molars in the ruminants and all vegetable feeders are characterized by roughened ends, which are peculiarly adapted to the trituration and pulverizing of vegetable fibre. This grinding tooth is formed of alternate layers of enamel, dentine, and cementum, which seem to be rolled and crushed together, and the ends presented for mastication. After the first layers wear off, the cementum wears out fastest and stands lowest, being softest; the dentine stands next higher, being next in density, and the enamel stands highest, being hardest and most resisting. This preserves a constantly rough and sharp grinding face, for use only keeps it in good grinding order. The patterns of the arrangement of the enamel differ in different species, and is so distinct and characteristic that it forms a basis for the classification of species and the diagnosis of fossil remains of herbivorous animals.

The horse has incisors above and below, which are broad and thick, and in wearing down present a "mark," much as in the molars, which somewhat indicates the age. The molars are more cubical than the molars of the ruminants, and wears in a pattern which is characteristic of the order, and which has played its part in the identification of fossil remains of the horse in the fossil beds of the West, and in which Prof. Cope found and traced, step by step, the descent and genealogy of the horse. This pattern is somewhat similar to that of the rhinoceros, of both extinct and living species, the orders being related.

The proboscide includes the great pachyderms which have a long proboscis—the elephants, living and extinct, and the extinct mammoth and mastodon. They usually have long incisor tusks, which grow outward and upward from persistent pulps. In the extinct mammoths and mastodons these attained great length. The elephant tusks furnish the ivory of commerce, and great quantities are still taken from Africa, so that if the destruction is not stopped, or a substitute found for animal ivory, our source will soon become extinct. They have no canines or premolars, and the true molars succeed each other from behind forward, the worn-out ones being cast off from the front of the groove as new ones push out from behind. The enamel plates of the India and African elephant have each a distinct pattern. The mastodon molars have great teat like tubercles, which are quite different from the flat, masticating faces of the molars of the elephant.

In the quadrumane we come to the highest animals next to man. Their dentition is closely related to that of man, and that of the higher apes is exactly like his. The lowest of the quadrumane are the lemurs, whose dentition is variable, and is not much closer to that of man than some of the lower animals. The higher quadrumane are divided into the Old World and the New World monkeys; the former have a dentition like a man, thirty-two in number, but the New World species have thirty-six teeth, an extra premolar on each side above and below, some few species having less. The Old World monkeys have the same number and arrangement as man, and the higher apes, the orang, the chimpanzee, and gorilla, are exactly like his, except that they are larger and coarser, and more prognathous, and have a diastema or space in front of the upper canine into which the lower canine closes.

The lower races of a man resemble the apes in having stronger teeth and more prognathism than the higher races. In the civilized European we find perfect vertical occlusion, complete closure of the space, the reduction or absence of the wisdom tooth, finer tissual organization, greater susceptibility to disease, etc.

—Dr. A. H. Thompson, *Topeka, in Western Journal.*

A SIMPLE AND EXCELLENT FURNITURE POLISH.—One part by measure of olive oil and two parts of vinegar. Shake well together and apply with a woollen cloth, after which take a dry woollen cloth and rub vigorously. A housewife who uses this says it is a first-rate, reliable furniture polish, always to be depended on for giving most satisfactory results.

COPPER AMALGAM.

In N. Y. Odontological Society.

Dr. Perry: I want to express a strong regret for ever having used copper amalgam. I think it will not only blacken the teeth, but blacken any man's reputation, and I think the sooner that is known and appreciated in the profession, the better it will be. Unfortunately, it is not a trait of human nature to profit by the experience of others. We like to learn for ourselves. I am commencing now to do over many of these fillings, which I put in two years ago. I have been doing them over for some time past. It is unreliable.

I feel impelled to make this severe statement in reference to copper amalgam because only recently a man long in practice, a member of this society, told me he had just commenced its use, and, knowing one must wait for two or three years to really know its effects, I thought it my duty to warn others as I warned him. It causes, first, the discoloration of all dead substances of the tooth; in the next place, it wears away mechanically, evidently on the surface, and it wastes away, on proximal surfaces, in a manner that suggests chemical solution. When it becomes necessary to remove such a filling, there is a more sensitive condition to contend with than when the cavity was first filled. When used for the purposes of contouring teeth, it takes but a year, or two years at the most, to allow so much waste from the fillings that food easily passes in between them, and the fillings have to be replaced. It is nasty stuff any way.

Dr. Howe: I am very glad that Dr. Perry has spoken on this subject. I have not used copper amalgam for over a year, and during that time I have spoken to several of my friends, expressing an unfavorable opinion of it. They have either replied, "You use it too stiff," or else, "You use it with too much mercury in it," or, "You do not mix it right." I have had some results which coincided with the favorable reports that have been made of it, but they were so few, as compared with the relatively large number of unfavorable results, that I do not consider it at all reliable. Its antiseptic properties have been dwelt on very greatly, and what has been said has, no doubt, given many dentists the confidence they have in it. I suppose it has been proven to be a permanent antiseptic material, but I find that teeth will decay right alongside of fillings made with it. Zinc-phosphate fillings would seem to me to be more reliable, when they are used with judgment, and the limitations of the material are recognized, than copper amalgam.

HOW TO EDUCATE THE PUBLIC.

All operators will admit that the more intelligent the patient, all other things being equal, the greater and more satisfactory the results of the operation will be. I refer, of course, to dental intelligence; for it is well known that intelligence, education, and refinement, along other lines, have no correspondence with dental knowledge, for we have often found the most intelligent and well-informed persons in other respects woefully deficient in this direction. And this could hardly be otherwise when we consider how meagre the popular instruction has been. The dentist would gladly answer any questions in this direction, but the nature of his work, requiring the closest attention, and the fact that his day only lasts while daylight is with him, prevents much instruction which would be gladly given if it were otherwise.

In many other arts and sciences there is a vast amount of popular instruction by the press, both daily and weekly, secular and religious. Take, for instance, electricity. How much has been written on this subject! and there is scarcely an intelligent person but what has a fair idea of the wonderful inventions of various kinds that have been brought out; and while they are not electricians, they are in an appreciative mood to receive all that can come from these devices. Or, how often, in the press, do you see short, pithy articles calling attention to the care of the eyes or ears, to diet, or the beneficial results of exercise and bathing, the importance of sleep, hygiene in its various manifestations, and, in fact, to a number of the ills that flesh is heir to!

It does not necessarily follow that a person can become his own physician, but it makes the patient a co-laborer to the common end of recovery, should he become diseased.

But it is a rare thing to see any reference to the care of the teeth and the hygiene of the mouth. Is it because the dental profession is barren of the knowledge that the people ought to have?

There has been some realization of this need, and a few efforts made to meet the demand, but it has been inadequate; some from not having been put in proper shape, and some from being too lengthy and cumbersome. The day of long, dry essays has gone. The people are too busy. As it is with the dentist, so it is with his patient, what is said must be short, crisp, and plain. A book of twenty-five or fifty pages will, in many cases, lie on the shelf and become covered with dust. What is said must be put in a few words and in a palatable form. How can this be done?

—*Dr. J. A. Osmun, N. J. Society.*

THE RESULT OF THE CALIFORNIA DENTAL BOARD.

The annual meeting of the State Board of Dentists, of California, ended after a three days' session. The nine applicants for certificates to practice were all rejected. Dr. F. F. Tebbets and Dr. F. W. Griswold, both of Sacramento, were elected President and Secretary respectively for the ensuing year. A committee, consisting of Drs. Hodgen, Griswold, and F. E. Knowles, was appointed to perfect plans for the future examination of applicants. A resolution was also adopted instructing the Secretary to address a circular to the dentists of each county asking them to forward a full list of the legal practitioners.

Mrs. Elmira Harding was brought before the Commissioners of Lunacy in San Francisco, not as an alleged lunatic, but because of an inordinate taste for cocaine and morphine, the gratification of which is ruining her health. An interesting feature of the case is that her husband, Dr. W. C. Harding, a dentist by profession, is also addicted to the use of the drugs, having been twice an inmate of the Napa Asylum in consequence.

Some years ago he originated a plan for the painless extraction of teeth through the use of cocaine and morphine, and it was in connection with his studies in this direction that he acquired a taste for the drugs, which he afterward found it almost impossible to overcome. His example had the effect of inducing his wife to become a user of the drugs, and before she had an opportunity to see and thoroughly understand the gravity of its effects on her husband, the habit obtained such a hold on herself that she could not break it off. Of late she is said to have been in the habit of consuming as much as a hundred grains of cocaine a day.

Dr. Harding himself brought his wife before the Commissioners yesterday and desired that some action should be taken in her case. She was very quiet and gentle in her demeanor, and expressed an entire willingness to do whatever might be advised as likely to prove to her benefit.

At the late meeting of the National Association of Dental Examiners, a committee, consisting of Drs. Sheppard, Fellows, Crawford, McElhaney, and Magill, was appointed to confer with a similar committee from the National Association of Dental Faculties for the better understanding of questions involving educational interests.

The committee subsequently reported that the conference committees had agreed on the following resolutions, which were, on motion, confirmed :

WHEREAS, There can be no question that the main object in view of both the National Association of Dental Faculties and the National Association of Dental Examiners is the better preparation of the young dentists for usefulness in the community, and that to secure this end it is desirable that the State boards of dental examiners and the colleges should work in harmony; therefore,

Resolved, That it is recommended to the State boards that when a graduate, after examination, has been refused a license, and his college requests information as to the causes of his failure to pass the examination, the boards shall furnish the faculty with a detailed statement of the subjects and questions on which the applicant has failed.

Resolved, That we discountenance the publication, by the State boards, of the names of colleges whose graduates have failed to pass.

DENTAL COLLEGE OF MINNESOTA.

We have a right to feel proud of the results accomplished by the College of Dentistry, of the University of Minnesota; the first class of six was graduated this spring, five of these went before the State Board and all passed creditable examinations, part of them as good as have ever come before the board.

This is especially gratifying for this class was with us through the transition period from the old to the new regime, and had many traditions which were not in harmony with the new order of things. While there never was open rebellion, there was sometimes lack of interest and failure to appreciate many requirements instituted for the elevation of our standard. It may be we are in advance of the times and too ideal in our aspirations. This was true of our law, but even now we see its beneficial effect. Other States are thinking of falling in line, and Prof. Sudduth assures us they would not have considered this recent change had it not been for our law. When States have uniform laws requiring the examination of all applicants, then colleges will of necessity have a more uniform standard and diplomas will be granted *only on merit*, and we hope irrespective of time.

Our aim has been in our school to prepare *every* graduate so that he would be able to pass any State Board in the country, also by retaining such work in the primary branches that any medical college in the country will grant the M. D. degree at the end of one winter course.

For these reasons we can not compete with many of the older colleges for students, for as long as all diplomas are worth the same, the majority of young men will go where they can get them the easiest, but we can offer those young men who are willing to put in a little more time, opportunities to fit themselves to be an ornament to our profession.

—Dr. Weeks, of Minneapolis, in Review.

The following is the showing of twenty-four of the twenty-eight dental colleges recognized by the National Association of Dental Examiners. Four failed to report:

NUMBER OF MATRICULATES AND GRADUATES OF THE DENTAL COLLEGES.		Matriculates.	Absentees.	Graduates.	Ratio.
Baltimore College of Dental Surgery.....	Baltimore, Md.	224	3	76	34.3
Boston Dental College.....	Boston, Mass.	96		31	32.2
Chicago College of Dental Surgery.....	Chicago, Ill.	323		94	29.
Harvard University, Dental Department.....	Boston, Mass.	44		15	34.
Kansas City Dental College.....	Kansas City, Mo.	110	5	43	40.
Missouri Dental College.....	St. Louis, Mo.	90		26	28.8
New York College of Dentistry.....	New York, N. Y.	283	8	85	30.9
Ohio College of Dental Surgery.....	Cincinnati, Ohio.	208		75	36.
*Pennsylvania College of Dental Surgery.....	Philadelphia, Pa.	252	17	94	40.
†Philadelphia Dental College.....	Philadelphia, Pa.	315		146	46.3
University of California, Dental Department.....	San Francisco, Cal.	63		16	25.4
University of Iowa, Dental Department.....	Iowa City, Ia.	161		58	36.
University of Michigan, Dental Department.....	Ann Arbor, Mich.	132	1	29	22.1
University of Pennsylvania, Dental Department.....	Philadelphia, Pa.	206	3	83	40.8
Vanderbilt University, Dental Department.....	Nashville, Tenn.	135		43	31.8
Northwestern College of Dental Surgery.....	Chicago, Ill.	14		3	21.4
Indiana Dental College.....	Indianapolis, Ind.	96		40	41.6
Dental Department of Southern Medical College.....	Atlanta, Ga.	103		38	36.8
School of Dentistry of Meharry Medical College, Department of Central Tennessee College.....	Nashville, Tenn.	5		1	20.
University of Maryland, Dental Department.....	Baltimore, Md.	163	4	64	39.7
Columbian University, Dental Department.....	Washington, D. C.	19		2	10.5
Royal College of Dental Surgeons of Ontario.....	Canada.	67		27	40.
College of Dentistry, Department of Medicine, University of Minnesota.....	Minneapolis, Minn.	36		7	19.4
American College of Dental Surgery.....	Chicago, Ill.	167		49	29.
Aggregate.....		3312		1144	34.5
* 15 female matriculates.	† 19 female matriculates.				
DENTAL COLLEGES NOT CONNECTED WITH THE NATIONAL ASSOCIATION.					
German-American.....	Chicago, Ill.	22		11	50.
Western Dental College.....	Kansas City, Mo.	61	1	9	15.
United States Dental College.....	Chicago, Ill.	43		11	25.5
College of Dentistry, University of Denver.....	Denver, Col.	12		5	41.6
Aggregate.....		139		36	
Whole aggregate.....		3451		1180	

TEMPORARY SETS.

In making temporary sets of teeth immediately after extracting, it is much the best plan to insert the six or eight anterior teeth into the gum, where the natural roots were, to a depth of about one-third of their length. Set in this way they look more natural, first, last, and all the time, and fit better after the gums have shrunk to any considerable extent. It is, however, very difficult to decide precisely where to cut into the cast for the insertion of some of the teeth, as the loose edges of the gums turn inward and obscure the outline of the alveolus when the impression is being taken. This can be partly remedied by trimming away such parts of the gum as will be too much in the way. Sometimes the prominent points of the alveolus must also be trimmed to allow a satisfactory adjustment of the teeth. All the foregoing is "old" in my practice. The next step is new. After trimming gum and alveolus, take rolls or pellets of softened wax of same diameter as that of each tooth or root, and insert nearly half way up the socket, and cut off one-fourth of an inch from the edge of the gum, and, while thus in place, take the impression with plaster in such a manner that each piece of wax will come away with the plaster. Where the wax has been pressed into the alveolus further than we wish to insert the teeth, the points must be trimmed away so they will make sockets in the cast only as deep as the teeth are to be inserted. When this is done carefully, the teeth will fit accurately into the gums, and not impinge on the process at any point, as they are very likely to do without such a guide for their adjustment. This plan is best for lower sets sometimes as well as upper, if the gums protrude badly. Where a single tooth is to be inserted between two long bell-shaped or flaring teeth, immediately after extracting, it is much better to place a piece of wax to fill the gap, so as to come away with the plaster impression. This overcomes any objection to plaster for such impressions, and nothing else is so reliable for the purpose. The depth in which the teeth are inserted into the alveolus will influence the amount of shrinkage that will take place in the gum and alveolus. If inserted quite deep, the length and prominence of the gum will be diminished, something at times very much to be desired. Or, if little or no shrinkage is desired, then gum teeth should be used for the temporary set. It is better there should be no temporary set than to have such hideous sights as are sometimes presented.

W. E. Driscoll, Manatee, Fla.

THE DESIRABILITY OF BRIDGE-WORK.

In Ohio Society.

Dr. J. R. Callahan said his experience and observations with the bridge-work of others had convinced him that it was not desirable either in his own mouth or those of his patients. Some of the most filthy pieces are gold cap bridges, partial and full dentures, and these from those we consider first-class operators.

Dr. J. Taft thought it criminal to insert bridges by cutting away sound teeth, such as bicuspid porcelain bridges with pins running into slots in sound teeth. Some cases he had seen were in the most villainous condition possible. Could smell the foul odor as soon as the patient opened the mouth, but the same condition may be noticed in full dentures on rubber, gold, porcelain, celluloid, etc. There is no necessity for it in either case. It may be sometimes the patient does not use it in mastication at first, because it is a new thing, permanently fastened, or a little sore; they fail to cleanse it properly for the same reasons till the neglect becomes habitual. Like filling and other operations, much of it is put in without proper preparation of the mouth or instruction of the patient. They should be taught how to properly cleanse such work, and it should be so inserted that it can be cleansed.

Dr. Sillito: Then like filling and other operations it is a matter of judgment. Isn't peroxide of hydrogen a good cleansing agent?

Dr. Taft: Like everything we do it should be a matter of judgment, of course. No; the patient should be taught to keep the mouth and the teeth clean without such an agent.

—Ohio Journal.

Gutta-percha is undoubtedly the best filling for a root. In fact, there is rarely excuse for any other, for the following definite reason: Granted that something else will serve, we must always remember that by some untoward accident the crown may be broken off, or something occur which shall make it necessary to remove the root filling. It is then that the advantages of gutta-percha become most apparent. A warm instrument will cleanse the canal, however sore the tooth may be, either from disease or traumatic causes. It is surprising to find so few advocating the cements, when we recall that they certainly have been proved worthy, where they must be used for retaining tooth crowns, which have pins entering the canal.

That oxychloride should seem to rank ahead of oxyphosphate is due, perhaps, to the fallacious idea that the chloride of zinc exerts a mumifying influence on the contents of the tubuli. This is a bad mistake, since, in a compound which rapidly crystallizes, it has little chance to do so to any appreciable extent. There is always one danger in using cements of either class; if pressed through the foramen, only well-ordered constitutions will resist, abscesses forming frequently where this accident occurs in the anemic. We have known sacs from which particles of the cement were removed, the abscesses being directly attributable to their presence. Gutta-percha pressed through a foramen will give no trouble. Implanted teeth lost from absorption of the roots have been removed, the roots entirely absent, and the root filling of gutta-percha intact. In one case the new bone had builded around the cone, forming a perfect matrix, with every indication of healthy granulation. It is undoubted that, as a foreign body, gutta-percha is more tolerable by the system than anything else.

—Ottolengui, in *Dental Mirror*.

FOR GETTING THE MOLD OF A CAVITY FOR A GLASS OR PORCELAIN INLAY.

Taking, for example, a peck cavity in an upper central incisor, it is first necessary to prepare the margin of the cavity, that is, to carry this back till an unbroken line of healthy tissue is obtained; for till this is effected it cannot be expected a perfect adaptation between the cavity wall and the glass inlay will result, for after the inlay has been fused, no alteration of the margin line must be made. Having obtained this, a *small* quantity of the deeper caries should be removed; but in no instance should any sensible undercuts exist, as they are likely to prevent the mold being withdrawn. To obtain a mold, gold foil, or platinized gold, of twelve grains should be employed, and I may here mention a difference that exists between the two metals. Platinized gold does not fuse at the same temperature as ordinary gold foil, and it does not apply itself so readily to the margins of the cavity, having a tendency to spring from its increased hardness. Having cut a square piece of foil large enough to exceed the cavity to a considerable extent, it is folded into *four* and then opened; by this means we obtain an apex which will pass to the bottom of the cavity. With index finger of the left hand, the foil is held at the margin of the cavity, and with a small pallet

of cotton wool held in the dressing forceps in the right hand, the wool is firmly pressed against the gold, and continued till it has been adapted completely to the margin of the cavity. The index finger of the right hand may then be freely pressed against the wool and the overlapping gold foil, till it applies itself against the entire cavity, part of the gum, and surrounding tooth. If the gold is not previously folded, it is liable to burst by the pressure of the cotton wool, thus affording a leakage when the glass is being fused.

—*Journal British Association.*

LIGHT.

“Light may be defined as any effect on the sense of sight.”

It is that state of things in which objects are or become visible; the physical conditions or phenomena determining the visibility of objects; the phenomena constituting day.

“Light is said to be the vibrations which, by their action on the retina, render visible the objects from which they proceed.”

Light is more than this; it not only renders visible the objects from which its vibrations proceed, but it illuminates other objects on which its rays are projected, and making an impression on the macula lutea conveys to the brain, through the medium of the optic nerve, a knowledge of the forms and colors of images within the visual field.

There are two theories of propagation of light. The first or *corpuscular theory*, though supported by such eminent scientists as Sir Isaac Newton, Marquis De Laplace and Jean Baptiste Biot, has been superseded by the *undulatory theory*.

When we remember that light moves at a rate of nearly 200,000 miles per second, and is transmitted from the sun to the earth, a distance from 92,000,000 to 93,000,000 miles, in less than eight minutes, the cause for renouncing the corpuscular theory of its dissemination seems quite apparent, as transit of corpuseles at that degree of speed would be impossible.

The undulatory theory assumes that there is everywhere an elastic medium known under the name of luminiferous ether, the vibrations of which constitute light, and when these vibrations come in contact with the retina constitute vision.

There is an agitation of the particles but not a transmission. The vibrations are regarded not unlike those of the atmosphere by which sound is produced and conveyed from place to place.

—*Dr. T. W. Brophy, in Review.*

CONTOURING.

I believe Dr. M. H. Webb was conceded to be at the head of those of our profession who carried contoured fillings to the greatest extreme.

His work has now stood long enough to prove its utility, and whoever has had the opportunity of watching the result can now render to the profession a great service by stating what that result has been. A great many dentists have refrained from extreme contouring by the belief that no one could make it as useful in saving teeth as a more conservative course. They are afraid that restoring the original form would be disastrous, even though sufficient anchorage could be secured, and the occlusion did not subject the work to a strain.

For teeth of only average density, if the antagonizing teeth should subject a contoured filling to considerable strain at every occlusion, there could be nothing more certain than that such a filling must work loose in time, while, if not so contoured as to sustain such disadvantageous pressure, we know they remain sometimes thirty years or more. Who can cite a case of extreme contouring subject to severe pressure that has stood half that time in teeth of average density? As already suggested, let us have a thoroughly reliable report of the present condition of Dr. M. H. Webb's contour work.

W. E. Driscoll, Manatee, Fla.

CHANGING THE FORM OF NATURAL TEETH.

We find a great many people who have natural teeth that look as though they had somebody else's teeth in their mouth. By examining the face and teeth for any length of time, in conversation with them, and in repose, we can imagine that if a tooth was cut at some particular point it would improve the face a great deal. Then we look at it further and know that if it is shortened somewhat at one side or point, or narrowed clear back as far as the molar, the face would be very much improved. This we call art technique, cutting off the teeth to harmonize with the features. One may be surprised to know how much of a tooth you can cut away without injury to your patient.

I had a case come into my hands over twenty-five years ago. It was the case of a young lady who had a fine education, cultured, but had a most hideous set of teeth, much too large for her, but sound and strong masculine-like teeth. She was ashamed of

them, and said to me, "Doctor, can't you do something with my teeth; if you can't do something to better their appearance you can pull them out." She was a friend of mine, and I told her that when she came next time to bring along her father, and I would talk the matter over with him. Her father came with her, and I suggested cutting the teeth down, shortening and narrowing them, and he said I could do anything I saw fit. I told him it was a little risky, but I imagined there would be no serious result, and she had them cut away. I cut and shortened them fully one-third in the course of two years, then polished the surfaces. That was about twenty-five or twenty-seven years ago. She has these teeth still, and they are in condition now. Since that time I have been free to cut my patients' teeth as much as I thought they ought to be. Very few patients come to my office but I make some change before I am through with them. It gives satisfaction to my patients. I cut them down with corundum and sand-paper.

—Dr. W. O. Kulp, in *Review*.

SOME SUGGESTIONS.

I think the various dentists that have questioned the originality of the "Chase plate," have not comprehended Dr. Chase's claim; it is *not* that a *combination* of rubber, celluloid, or other material is his discovery, but the peculiar method—no holes, pins, loops, etc. "Combination" plates have been made for 30 years, but I have yet to learn of any dentist using Dr. Chase's method, though they claim to have made combination plates long before his patent.

As for the claims for its advantages, I can think it will, in a very small degree, remedy the evil of the absorption of the alveolar process, caused by wearing rubber or other regulable base plate. All mouths are not affected equally unfavorably. When "all metal" plates were worn, such mouths—soft, flabby, with ridge all gone—were not seen. Yet, I fail to see how a plate of metal, covering only the roof and *gum* or *process*—the part most needing protection—covered with rubber, is going to effect a remedy.

Yet, as practical proof is worth any amount of speculation or theory, Drs. Chase or Billings would like to be heard from. I can understand some of the advantages claimed in other respects, but the principal defect, *absorption*, does not occur in roof of mouth.

Some dentists have, in the *ITEMS*, suggested the need and advantages of much thicker flasks than any now made. My experience has

been, that I have found any of the flasks on the market amply thick and unyielding enough. I use brass exclusively. I feel sure I could "press up" any case in a flask no thicker than sheet iron, by using a brass flask cover at top and bottom, and have no cracked gums, displaced or broken model or plaster.

Here is another one of the little "helps" suggested by various dentists.

To make various thicknesses and sizes of felt polishing wheels, for lathe, buy different sizes of cones, slice up on bench, or while running on lathe, and soaking in thin shellac. These make much better than you buy, and cost but a trifle, compared to same number of new ones.

A. A. Hazeltine, New Bedford, Mass.

A CALCIFIED PULP.—In the August ITEMS I notice a case of calcification of a pulp. Last March I filled for a gentleman a sensitive crown cavity in a right upper first molar. I placed over the pulp a non conductor and filled with amalgam. No uneasiness was experienced till the middle of August, when the patient complained of an uneasy feeling about the tooth, sensitive to cold, and when biting on it. This continued for a week, when he was awakened one night with a severe toothache. The next morning I removed the filling to find, to my surprise, the cavity was not sensitive. I cut into the pulp chamber and found a dead nerve. Removing the *débris* I found the anterior labial portion of the pulp calcified throughout its entire length. I removed it intact, even to the part that passes the foramen. I then filled the canals and cavity with no further trouble. I have the specimen, which I will send to any one wanting to see it.

W. E. Callane, Flora, Indiana.

YOUNG DENTIST.—As you have drilled to the end of root, the pulp must be thoroughly removed, and the "sensitive feeling you fail to overcome" is caused from inflammation at apex of root. Creasote in the case acts as an irritant and should not be used. If the drill has not passed, or forced any foreign substance through the root we would advise the use of oil of cloves, laudanum, or campho-phenique, providing no pus exists. In case of pus formation use pure peroxide of hydrogen. Internal remedies may be used to reduce heart action and relieve inflammation, but think it unnecessary in this case.

E. N. Francis.

THE EXCLUSIVENESS OF NEW JERSEY LAWS.

Considerable comment has found its way into the secular and professional press, regarding the speech made by Dr. E. Parmly Brown at the last meeting of the American Dental Association. The New York *Evening Post* gives an extract of it as follows:

"I have two diplomas, and I have been a teacher of dentistry. Yet if I should go into the State of New Jersey and make my residence there, as I was thinking of doing two years ago, I could not practice my profession there without going before the local board, some of whom were my own students, undergoing a special examination, and paying a fee of thirty dollars. If I should evade the law I would be liable to a fine of from fifty to two hundred dollars, and be subject to imprisonment. I have some relatives who have a country place in New Jersey. They have been told by their family physician that if they are ill he cannot visit them without making himself liable to the law. This city is full of eminent specialists, yet not one of them can legally visit a patient in New Jersey. My partner is a sporting man—that is to say, he is fond of gunning. He has a friend of the same tastes in New Jersey, yet he cannot, while visiting his friend, shoot a bird without making himself liable to arrest.

"Those laws are an example of the spirit which pervades New Jersey. So far as the dental profession is concerned, I contend that it abridges my rights under the Constitution. The same law was declared unconstitutional by the Supreme Court of New Hampshire, and the question of its constitutionality has, I believe, been carried to the Supreme Court of the United States."

The comment of the *Post* is rather severe:

"The New Jersey Legislature, about two years ago, inspired by the dental associations of that State, which in some directions are particularly well organized and active, passed a law prohibiting any dentist from practicing in the State, no matter what his credentials, without a special examination before the State Board.

"This law has popularly been supposed to be directed against the New York and Philadelphia dentists who might be tempted to sojourn during the summer at Long Branch, Asbury Park, or some one of the sea-side places that line the coast, and thus divide the harvest which the New Jersey dentists would otherwise reap from the numbers of rich strangers that gather there. The approach of the summer season renews the interest in the subject.

"Outside of the State the New Jersey law is regarded as an odious form of protection, unconstitutional, the refuge of incompetency, the outcome of selfishness, jealousy, arrogance, and altogether foreign to the fraternal relations which should exist among States."

We have no doubt the framers of the New Jersey dental law intended no such exclusiveness. It is difficult to frame a prohibitory law that will not injure some one. Let us hope it will not be so administered as to unnecessarily work harm to many.

TIME AT DENTAL COLLEGES.

I have always regarded with satisfaction the fact that I was one of a small company of dentists that assembled in New York City, a few years ago, and started the movement for advance in the thoroughness on dental education, by terminating the one year system and establishing the compulsory two years' course. The results of that reform have been very gratifying; all who teach in dental colleges see the great advantage that accrues when the student is given ample time for acquiring a knowledge of the science and art of the profession which he is to practice. Now we are on the threshold of its extension to three years. While I have no doubt this will be of benefit, I think it may be a question whether there might not have been general reforms brought about in other features in the course of instruction more urgent than is the further extension of the lecture course.

—Dr. H. Leffmann, in *International*.

I consider when I take a tooth where a dead pulp has just made itself manifest, in fact, an abscess is in its first stage, and in one sitting open up, cleanse, disinfect, fill root canal, thereby giving immediate relief to the patient (in from one-half to one and one-half hours, accordingly as there are one to three roots involved), that I am entitled to the same fee as if I spent two or three weeks treating the tooth. In fact, if anything, more.

Except when the material used is visible, and, therefore a person's vanity involved, it should be of *absolutely* no interest to the patient what is used; as he desires a result only, the ways and means of obtaining it should be left entirely to the better judgment of the operator. Therefore should it be known that we are paid for our skill and our time, irrespective of the material we use.

C. Edmund Kells, Jr., New Orleans.

"Well, how does your assistant get along," was asked of a popular dentist, who had recently employed a promising young graduate.

"He is a thorough gentleman, well educated, and passed a brilliant examination at college. Unfortunately, he doesn't know much about dentistry."

PHYSIOLOGICAL ACTION IN THE MOVEMENT OF A TOOTH.

When force is exerted on a tooth for the purpose of moving it, the first effect produced is the compression of the pericementum between the tooth and alveolar wall on the advancing side, and the stretching of the same membrane on the opposite side. In the compression of the membrane, the blood supply is partly cut off, and the nerves, by their irritation, create a sensation of pain, which is soon obliterated by the semi-paralysis brought about by continued pressure. At the same time, this irritation stimulates and hastens the development of the osteoclasts, which at once begin the work of breaking down and absorbing that portion of the socket pressed on.

Bony tissue being thus removed, accommodation is made for the advancement of the tooth, which at once takes place. Under continued pressure this action is renewed again and again, till the tooth has reached its intended position. While this is taking place on the advancing side, quite an opposite condition prevails on the opposite side. There the fibrous tissue of the pericementum has been subjected to extreme tension; greater room has been provided for the accommodation of the nutrient vessels, and osteoblasts are being developed for the formation of bony material to add to the alveolar wall and thus close the space caused by the movement of the tooth. While these processes of absorption and reproduction on opposite sides of the tooth have been going on coincidentally, their results have been very unequal, for the absorption of bone is a far more rapid process than its formation.

During the entire time of moving and for a long time afterward, the tension of the pericementum on the free side of the tooth is kept up to such an extent that, were the force of pressure or retention removed, the tooth would at once be drawn partly back into the space created by its movement.

The tendency is only finally overcome after the deposit of osseous matter in the alveolar socket has been sufficient to allow the pericementum to resume its normal thickness on that side of the tooth, when, by virtue of the removal of the tension and the support of the new bony tissue, the backward movement of the teeth will no longer be possible.

While this process of reparative construction has been going on, the structures about the opposite side of the tooth have been adjusting themselves to the new condition. The pressure on the tooth having ceased, no more bone is absorbed; any injury inflicted on the pericementum by its continued compression is repaired; the

nerves and blood-vessels resume their normal functions, and the tooth in its new position becomes a far more useful member of the dental organism than it had been. —*Prof. S. H. Guilford, in Orthodontia.*

[In my hands this method has been remarkable successful.—ED. ITEMS.]

GRADUATED IGNORAMUSES.

Prof. L. D. Shepard, of Boston, says : We examined last July a graduate who claimed to have taken three full courses, the average of whose marking by the five examiners in his practical demonstration was twenty on a scale of one hundred, and in his theoretical examination showed such ignorance that the total average of both practical and theoretical was twelve per cent. Our examination was kindly and patiently conducted, with a view to call out the evidence that he had the requisite knowledge and skill. He came in December for a second examination, and, after spending over two hours in an attempt to adjust the rubber-dam, in a simple case, for the filling of a crown cavity in a superior first molar, gave it up and went home without taking the examination in theory. We are ready to examine him again as often as he cares to come, and trust that he may, by further study and application, become proficient; but the serious fact remains that his disappointment and the blighting of his professional life are greatly aggravated by the failure of the college, which had opportunities far superior to ours to thoroughly know his capabilities, to retain him in the position of student till he had the knowledge and skill which his diploma says he has, or by a more honest dealing with him let him know, if such may be the truth, that he has not the peculiar talents requisite for an educated dentist. We have to deal with the products of the colleges, and are not concerned with their management, success, or failure; but the graduating of this man, and some others whom we have examined, by one of the most popular dental colleges, suggests some serious questioning. An institution having a reputation which attracts students in large numbers from far and near, with the means which would naturally result from years of prosperity to supply itself with an ample corps of skilled lecturers and clinical teachers, should have such a regard for its position as a leading college and for its alumni who have contributed to give to it prominence, should so manage its course of instruction and the granting of degrees, that its diploma would have a relative rank among the diplomas of all colleges commensurate with its popularity. —*Cosmos.*

THE CRITIC CRITICISED.

In August ITEMS Dr. Sanborn seems to have gotten a little mixed in his chemistry. His statements are "not in accordance with facts as I understand them." He says nitrous oxide is represented by N_2O_2 . Nitrous oxide, or oxygen monoxide, is represented by N_2O . His formula simulates the old nomenclature (NO), which has long ago been discarded. Again, he misstates the composition of the atmosphere. Assuming that the proportions of N and O are as four to one (which is only approximately true), his formula would not be correct. Four atoms of N have an atomic weight of fifty-six; one of O has a weight of sixteen—together, seventy-two. Here the proportions of four to one does not hold good. As there exists no chemical union of the elements, it becomes unphilosophical to represent the purely physical aspect of the atmosphere by chemical formula. If this, however, is attempted, it should be written $4N_2+O$, which means four molecules of N added to one of O.

Still, again, the gentleman's reference to the compounds of iron is equally erroneous. Iron rust, as ordinarily observed, is a *sesquioxide*, represented by Fe_2O_3 . Practically, we have no *binoxide* of iron. Manganese being the only metal of the iron group that forms a binoxide.

W. S. Elliott, D. D. S., Sag Harbor, N. Y.

In the August ITEMS there appears a criticism by a gentleman who signs himself "M.D." (which is believed by many to be an evidence of learning), in which a writer (probably a plain D. D. S.) is taken to task for saying that "Nitrous oxide gas (it never is a solid or liquid) contains nothing but the elements of common air. The only difference is that these elements are mixed in another proportion, etc." Now, I may be peculiar, but I like an explanation that explains, and by one who knows more about a subject than I do. When he says that nitrous oxide is represented by the formula N_2O_2 , and repeats it three times in thirteen lines, it looks as if he meant it, and believed that statement to be true. But it is not. The correct formula is N_2O .

The elements of air (it is not necessary to say common air) are not *chemically* combined, and it is, therefore, improper to write it as " $4N+O$," as chemical nomenclature knows nothing of physical mixtures. Air is a physical mixture, but nitrous oxide is a

chemical combination. It may help our critical friend to remember its formula by noticing that when ammonium hydrate is decomposed by heat, the result is always nitrous oxide and water, thus: $\text{NH}_4\text{NO}_3 = 2\text{H}_2\text{O} + \text{N}_2\text{O}$.

Any one who is familiar with chemical notation will see by the above that the two parts of the equation balance, making it impossible to change it to N_2O_2 , and have water left.

L. D. Wood, D. D. S., Grand Rapids, Mich.

NITROUS OXIDE.—In August ITEMS is the question: What is nitrous oxide? By J. F. Sanborn, M.D. Had the writer been perfect in his chemical nomenclature we might have thanked him for the effort. The chemical formula for nitrous oxide is N_2O , not N_2O_2 , the latter being nitric oxide. The reaction is shown by gently heating ammonium nitrate. This, when decomposed completely, forms nitrous oxide and steam. $\text{NH}_4\text{NO}_3 + \text{heat} = \text{N}_2\text{O} + 2\text{H}_2\text{O}$, and to more fully demonstrate to us the difference between the chemical union in nitrous oxide and the mechanical union in air, he used Fe_2O_3 as an example. But by a gross mistake he called it binoxide instead of sesquioxide.

F. W. Steinbock, Philadelphia, Pa.

It is universally acknowledged that the Minnesota dental law is an advanced step. It was somewhat startling at first to college men, but those who have the best interests and welfare of the profession at heart, rather than the financial success of any one college, recognize the importance of the step taken and the great benefit such a rule will be to the profession. We must acknowledge with shame that the colleges—some of the very, oldest—have been doing some very bad work. The younger and smaller colleges have, in some respects, been doing better work, for here the student has personal attention, but where there is a crowd the teaching is general rather than personal. It would be better if the "Minnesota idea" would become general, and all examinations be conducted and diplomas granted by an independent board. The State Board, as at present constituted, could not do this; but if the diploma-granting power were conferred on a board separate from the college, the results would be much better.

—Dr A. H. Thompson, in Review.

The New Hampshire Dental Society will hold a special meeting at Manchester, N. H., September 29th and 30th, October 1st, 1891.

Burton C. Russell, Secretary.

In April ITEMS was an article on phytolacca (poke root) that I want to add a word to. That is: It is the best remedy for quinsy extant; used in small doses, and stronger as a gargle. In fact, if used when the premonitory symptoms set in, it will abort the disease. According to Burt's "Materia Medica," it comes nearer to being a specific for diphtheria than any other drug. *P.*

LEAD PIERCED BY INSECTS.—Referring to the article in your issue of this date, under head "Lead Pipe Pierced by Insects," I have in my possession a lead bullet, that I cut out of a tree under which Grant and Pemberton arranged for the surrender of Vicksburg, Miss. The bullet was lodged just under the bark in the sappy portion of the tree, and has three holes pierced through it by some kind of an insect. One of the holes contained one of these insects at the time I secured the bullet.

These facts can be substantiated by two witnesses now living.
Chicago, June 13, 1891. —*Wm. E. Selleck, in Scientific American.*

In a recent ITEMS, some dentist says, "If rubber is closely confined in vulcanizing, its expansive force will break the blocks of teeth."

Another has said, "*Some* rubber would, and some would *not*."

Dr. White, of Yorkshire, asks: "How can these things be?"

Rubber doesn't expand while vulcanizing. Breaking occurs while the flask is being screwed down in the press. The lower half of the plaster case, or that containing the cast, should only be extended up to the edge of the porcelain gums. Then the gums will be fully encased and protected by the plaster of the upper half of the case, and no fears need be entertained of a break.

J. H. Boyett.

The following case, though not pertaining directly to the dental profession, may prove an item of interest to some of your many readers.

A gentleman of my acquaintance, aged about fifty years, is the patient. At the age of twenty-four he had the misfortune to break a glass water-pitcher in his hand. Last week, after a lapse of twenty-six years, a large swelling came on the back of his hand, and in a few days began discharging very freely. One day, after doing some very heavy work, the discharge brought with it a piece of that glass pitcher. Is it not a rather remarkable case?

H. W. Cleveland, East Akron, O.

EXPERIENCE WITH REMOVABLE BRIDGE-WORK.—EDITOR ITEMS:— I would like to give an account of a case of removable bridge-work, which I have been wearing for several years, as it would be some interest to the profession. Many knew of this case when first made. They are removable, the work of Dr. T. S. Waters, of Baltimore, in 1887, which was exhibited by him at the Southern Dental Convention at Fortress Monroe, Va. It has stood the wear of mastication well. It is perfectly comfortable, gums perfectly healthy, no irritation, and no trouble from the teeth to which it is attached. I am proud of the comfort it gives me, and am glad to know that we are blest with such an invention.

F. C. Exley, D.D.S.

Post-Graduate Schools of Prosthetic Dentistry are of great benefit. The following letter, addressed to the Chicago Post-Graduate School, is an example :

DR. L. P. HASKELL. *Dear Doctor:*—I cannot express enough my satisfaction of the manner your school of prosthetic dentistry and dental laboratory is conducted. Being an old practitioner, and having visited quite a number of dental colleges in the United States and in Europe, I believe myself somewhat competent to judge.

What I have achieved is much more than I expected. Your ever-willingness to assist the class and give reasons for your methods helped me wonderfully. I go home a wiser, a better man, and shall ever remember all the little hints and smart professional tricks you kindly gave me while working under your supervision.

John Henry Wiede, M.D., D. D. S., Berlin.

AMALGAM.—I do not think oxyphosphate has solidity and strength enough to stand a contour filling ; but, certainly, amalgam often acts admirably. Sufficient care is not taken to pack the amalgam solidly from the foundation. It takes time to put in a good amalgam filling. The rubber has to be applied with much care, the cavity shaped, and the amalgam packed, not in a huge mass, but quite dry, and built up carefully. The rubber should not be pulled off, as where gold has been used, but be cut away with the greatest care, so as not to take the risk of displacing any of the amalgam at the neck of the tooth.

Dr. G. S. Allen, New York.

In catarrhal affections of the trachea and its branches, the *inhalation* method is to be recommended, for which purpose I usually add ten per cent menthol to the cocaine-phenate solution, as an adjuvant.

Baron von Oefele.

We are told that the largest fee gotten in New York for one person for putting a mouth in order, and bill paid, was \$1,500. This service was rendered some twenty years since, and proves to-day its value, being mostly contour work of an extensive character, with teeth shoulder to shoulder. We know of the aggregate being paid for a series of services for a family to the amount of \$2,850. We saw this bill paid, and cheerfully. Here is the other extreme. A dentist being asked, "Doctor, how much is your largest fee for one person?" "Well, I sometimes get as high as thirty-five dollars."

—Review.

During the hot weather frequently empty your dental spittoons, and use an *odorless* disinfectant (Platt's Chlorides, Condy's Fluid, etc.), otherwise you will not know whether the odor comes from the disinfecting agent or from foulness. Nasty cuspadors and musty offices do not tend to elevate the individual or the profession. Often patients coming to us have remarked that they had "changed their dentist" for no other reason. They liked the man and his work, but could not endure the surroundings. Don't have your rooms looking like a lawyer's office or a surgery. A few cut flowers, cheerful pictures, and entertaining reading matter, will go a great way in helping you to the better class of patronage. Try it.

W. H. S., in *Ohio Journal*.

In odor from sweaty feet there is an excess of butyric acid; that is what causes the odor. Soda won't help it very much, but very mild sulphuric acid is a very good remedy indeed. An alkali does not remove it at all. The other day a gentleman brought me a little box of a French preparation for which he paid five dollars. I examined it, expecting to find some powerful chemicals in it. It was powdered alum, worth two cents a pound; and it worked excellently. It is an acid preparation. In that case an acid preparation prevented those glands from giving acid secretion. I should infer that salicylic acid, if properly used, would be a good remedy. That is not an acid really; it has no solvent powers whatever.

Prof. Mayr.

CORUNDUM WHEELS.—Keep your corundum wheels wet with water containing a few drops of alcohol. If they have become gummed, soak in a solution of caustic potash, afterwards washing in weak alcohol. The treatment is old, but none the worse on that account.

—*Odont. Jour.*

THE MISPROPORTION OF MEDICAL MEN in the United States, when compared with other countries, is simply ludicrous. France, with a population of thirty-eight millions, has less than 12,000 doctors, and graduates 624 medical students a year. Germany, whose population is about forty-five millions, has about 30,000 doctors, and graduates 935 students per annum. The United States, with a population of sixty-three millions, has about 100,000 doctors, 13,000 medical students, and graduates 3,740 medicos per year.

—*Dr. Harlan, in Dental Review.*

Drilling out fissures or grooves to their end is not always done as thoroughly as it should be. Sometimes we see fillings where fissures well defined have been left, especially in the grinding surfaces of molars. This is often because it is tedious work to drill them out completely. I have found, by using the right form of drill, I can open them up easily. I simply take a small inverted cone bur, and after it is worn down so that the blades are short, I grind the bur off on two sides, toward the cutting edge, forming a sharp drill. This kind of drill will walk right through a fissure between the plates of enamel every time.

—*Dr. C. N. Johnson, in Review.*

If third molars are not malposed, not out of line, if they can be made to develop, I should say fill them and retain them. You do not know how soon you will fall through an elevator shaft or be run over by a bicycle or lose one or more teeth, and these teeth will come in at that period. Then, furthermore, the pulps of the bicuspids and first molars may die, and the patient may get into the hands of an efficient dentist, or he may be on a sea voyage where he cannot get attention, so he would lose his tooth. If the third molar is in place and one piece of bridge work is put in the mouth you have got it there; there is a posterior attachment to the bridge. From my study of the subject, observation and general practice, I should say that the retention of the third molar is a necessity, and that modern dental surgery is able to retain it.

—*A. W. Harlan, in Review.*

DR. WM. H. ATKINSON.—Dr. Geo. S. Allen, of New York, says of this hero : As a boy I knew him in Cleveland, and probably there are few here who knew him as intimately and through as many years as I have, who have known both his social and professional life. He was a man brought up under many disadvantages (he was born in the wilds of Western Pennsylvania) and in the greatest poverty; but by the force of his intellect, and his intellect only, for he never had the chance while a boy of acquiring an education, he had made himself a name which was known the world over.

No man ever lived who worked more fully, heartily, earnestly for his profession than Dr. Atkinson. Whatever may have been his faults, he was true to his profession, and true to his brother practitioners.

A robust-looking man, past middle life, was threatened with what his physicians called carbuncles. The patient had suspected his teeth had something to do with his pains, but on consulting two or three dentists had been told he was growing old, and that it was not worth while trying to do anything with his teeth. Finally a physician sent him to me. I found the pulps dead in three teeth. By treating these he was relieved of threatening symptoms of septicemia that were becoming prominent. Lest it should appear that septicemia would hardly arise from such a source, I wish to emphasize the fact that this disorder frequently results from a small amount of effete matter.

Dr. C. R. Butler.

NECESSITY FOR CORRECT DIAGNOSIS.—A lady was confined to her bed by what her physician supposed to be diphtheria. After being under treatment for a week she began to suspect her teeth were in some way implicated. I was called in and made an examination; I found the pharynx and tonsils so severely inflamed it was with difficulty I at last decided the prime source of her trouble was in an impacted wisdom tooth. On extracting that, she gradually but surely improved and soon got well. For another patient with an external opening of an abscess in the lower jaw—the fistula being near the mental foramen—a physician had extracted the two lower first and second molars without affording relief. The wisdom tooth only remained on that side. This gave no response to the usual test for a dead pulp, nor could the fistula be certainly traced back to it. This tooth being of little value on account of the loss of its antagonist, was removed, experimentally, and most happily as it proved, for the fistula soon healed.

—*Dr. Otto Arnold, in Dental Review.*

Monthly Gossip.

BY WM. E. BLAKENEY, D.D.S.

OCCUPATION, says Willard, is the armor of the soul.

PEROXIDE OF HYDROGEN is the most agreeable antiseptic in use.

DR. TRUMAN reports a case of the eruption of a cuspid under the chin.

ATTENTION, says Lowell, is the stuff that memory is made of, and memory is accumulated genius.

WHEN ARSENIC HAS BEEN APPLIED to the pulp and the patient returns with pain, Dr. Harper uses cocaine with satisfactory results.

IF A CONTRIBUTOR to the *Philadelphia Recorder* is right in his figures, four tons of gold is carried around in the mouths of Philadelphia's "one million" inhabitants.

J. S. DORSET, M. D., of Texas, defines heredity as that "biological law by which all beings endowed with life tend to repeat themselves in their descendants."

DR. FILLEBROWN says, "It is always very easy to see other people's mistakes and overlook our own," and the doctor is about right in this opinion.

DENTAL CRIES has been investigated and described, but no one has yet offered an explanation of its causes that has been accepted as final by either dental or medical practitioners.

DR. G. A. YOUNG, of Concord, N. H., is said to have prepared and filled a cavity, using thirteen sheets of No. 3 gold, in twenty-eight minutes. How thoroughly the gold was packed is left for the imagination to determine.

THE "DENTAL REVIEW" says: "Make a saturated solution of zinc sulphate in water and use it with the powder in oxychloride packages and see how hard it will become. Use it as a foundation for filling, or in pulpless tooth crowns."

IT IS THE OPINION of the *Bacteriological World*, "that the words germ, bacteria, microbe schizomycetes are used in our present literature almost as synonymous terms, but microbe seems preferable to germ or bacteria, and schizomycetes is a better scientific term than either."

THE GREAT RUBBER syndicate of Para, New York and London has collapsed, and John C. Goncalve Vianna, *alias* the Baron de Gondoriz, the bugbear of the trade, has once more been defeated in an attempt to corner the world's supply of crude rubber.

DR. W. H. WRIGHT, in a very able paper read before the Vermont State Dental Society, his subject being: "Our Duty Toward the Dental Student," maintains that among the first things to be impressed on the student is the importance of being a gentleman.

ALUMINUM WIRE is said to be useful for many purposes in the dental office, such as strengthening rubber plates, making canal points, or as a carrier for conveying iodine, aromatic acid, or any corrosive agent, excepting muriatic acid, it being soft, pliable and clean.

WHEN A DIVIDED PORTION of the mercury remains at a fixed point in the top of the tube, the editor of *Dental Office and Laboratory* unscrews the thermometer, turns it upside down, and forces what is in the bulb to unite with the detached portion.

A REMARKABLE DISCOVERY has just been made by Dr. C. L. Sleich, of Berlin, Germany. He was conducting experiments with a view to determining how weak a solution of cocaine would prove efficacious as a local anesthetic in minor surgical operations, when he stumbled on the fact that simple water, injected under the skin with a syringe, renders the flesh, at that point, insensible to pain.

IT IS THE OPINION of Professor T. Gaillard Thomas that "the discovery of the transmission of disease by bacilli has brought the student of to-day on a plane far more elevated than that which even the youngest of their teachers occupied on his graduation." Independent of this discovery, students of to-day, by the advanced thought of an advanced age, of necessity occupy a plane far ahead of those of a preceding generation.

"TAKE AWAY FROM OUR PROFESSION the stimulus of invention," says Dr. G. W. Hoffman, "and when you deny members of our profession the right to patent, you take away all stimulus, and the march of dental progress will stop, much after the manner of 'Grandfather's Clock.'" Very true, but it would be difficult to make the dear old grandmothers in the profession, who hold opposite views, believe this.

THE MANAGEMENT OF INFIRMARIES connected with dental colleges received some pretty rough handling by Dr. Grady, of Baltimore, in a paper read before the Section of Oral and Dental Surgery of the American Medical Society. It is about time the abuses exposed by the doctor were ventilated. Dental infirmaries, as a rule, develop a good deal of physical infirmity, and therefore stand in need of a big dose of argumentative shot. The doctor's paper is published in the *International*.

"BUT A FEW YEARS AGO," says Professor Miller, of Berlin, Germany, "it was thought indispensable to the success of extensive

surgical operations that a spray of carbolic acid or sublimate should be kept going constantly during the operation, to prevent an infection by chance air germs. This practice has now been abandoned, because it has been found that the danger of infection by air germs is practically null, compared with that of infection by unclean hands and instruments.

"ONE OF THE WORST CONDITIONS we meet with," says Dr. M. L. Rhien, in the *Dental Register*, "in the various aspects of pyorrhea alveolaris is where, through the ravages of the disease, death of the pulp has ensued and there is added to the original septic matter the pus from the broken down pulp. This condition," the doctor continues, "generally takes place without any warning to the patient; in fact, it is impossible to learn at what time the death of the pulp takes place."

DR. GEORGE T. BAKER, at the American Academy of Dental Science, exhibited a device which he uses to insert a tooth, temporarily, when one has been extracted. It consists of a yoke of thin platina wire, the two arms of which bend over the teeth adjoining the space to be filled. A plate tooth is ground to fit the gum and rest on the yoke; the tooth is backed with platina and soldered, and finally tied in place with floss silk.

"THE MEETING OF THE AMERICAN DENTAL ASSOCIATION, at Saratoga," says the editor of the *International*, "was unquestionably one of the most valuable, in a scientific sense, that has been held for several years. The essays and discussions were of a character not possible a decade ago, when it was thought necessary to spend the hours of a meeting of this kind in discussions on filling teeth or mechanical contrivances, important as these are, seem to have passed away, and the active mind concerns itself now with problems on therapeutics, surgery, and on those profound questions that relate to the origin of life."

DR. W. F. ARNOLD indulges in some plain talk in the *Odontographic Journal*. He says: "The brutal and unprofessional practice of some dentists of extracting roots by cutting through gum and process with their forceps, to grasp a decayed root, has no excuse, and yet it is a common thing to do when the patient is under the effect of gas. Not unfrequently the fifth nerve has been severed, and facial paralysis induced by too deep a dip of the forceps in the extraction of the wisdom tooth. Cutting through gum and process to extract a root below the free margin of the gum is malpractice, and a person so disposed can recover damages for improper laceration of the mouth."

Our Question Box.

WITH REPLIES FROM OUR BEST AUTHORITIES ON DENTISTRY.

Address all questions for this department to DR. E. N. FRANCES, Uvalde, Texas.

Question 20. *What is the safest period of gestation for the extraction of teeth with or without anesthetics?*

First week, with or without anesthetics.

C. E. Esterly, Lawrence, Kansas.

Safest period is prior to fourth month. Avoid extraction if possible during this time, and especially with anesthetics.

R. L. Hays, San Antonio, Texas.

After the period of quickening, because then the development is so far advanced that deformity from shock is not likely to occur.

H. W. Le Fevre, Hillsboro, Ohio.

Have never seen any serious trouble due to extraction during gestation. Think the danger greatly overestimated in all text-books. If any serious results, think they would be between the second and fourth months.

J. P. Root, Kansas City, Kansas.

Should defer extraction during gestation, unless it be an imperative necessity; and, in that case, should let the patient drift as much as possible to her own conclusion, *i. e.*, if she wanted and insisted on an anesthetic, I should yield to the demand (if all else were normal), no matter at what time after the second and before the eighth month. Each of these cases require separate consideration, and one must be governed by the presenting circumstances. I think, however, there is more liability to abort from a prolonged and severe toothache, than from a shock from extraction with or without an anesthetic. I recall to memory a severe case of extraction, without an anesthetic (at about the eighth month), followed by syncope and hysterics, and yet with no apparent bad effect afterward. Also, a case where extraction became necessary (at about the third month), nitrous oxide being used as an anesthetic, and followed by hysterics, but no ill effects afterward. If one can render his patient comfortable, extraction should be avoided during gestation. As a general rule and safe guard there should, at no time while in this state, be any opposition or resistance to such a patient, and the easiest and mildest way is the best.

G. A. Englert, Catskill, New York.

Ordinarily, any time is safe and permissible. There exists at present, and always has among the laity, an opinion that a woman should never have a tooth extracted while pregnant; but this idea does not prevail with the medical profession of to-day, and is fast losing ground, being looked on as a relic of by-gone days, like many other notions and theories pertaining to medicine and surgery of earlier days. So, I say, ordinarily, any period is safe; and I mean by this, if the woman is well and strong, with no complications, there would be no harm at any period; still, should prefer the earlier months, up to the seventh. In this class of cases should not hesitate to give anesthetics, as they will do no harm. If the woman is feeble, anemic, any

previous tendency to miscarry, or is nervous and hysterical, I should be very cautious about extracting any great number of teeth; probably no harm would come from extracting one or two. My fear in this class of cases would not be so much from abortion as shock to the system. In *all* cases, if there are any kidney or heart complications, anesthetics would not be allowed any way, and no pregnant woman should be given anesthetics without a previous examination of the urine. There have been cases reported of hemorrhage after extraction during pregnancy, and we have such cases when pregnancy is not a factor. They are, however, very rare; but if the precautions which I have mentioned are observed, in my opinion, no harm will follow.

T. Mound, Rutland, Vt.

Question 21. *How do you mend plaster models or replace broken teeth? Is there any method of producing hard plaster models with chemicals, and can anything be mixed with plaster to prevent expansion in vulcanizing?*

Replace broken pieces on plaster models with liquid silic. To prevent teeth from breaking, I set pins in the impression so they will extend the full length of teeth on model. Think all chemicals decompose plaster.

H. W. Le Fevre.

I use "Major's Cement" for broken models. I have never found anything to mix with plaster to make hard models. It is claimed that salt reduces the expansion of plaster.

T. Mound.

I mend plaster models, replace broken pieces and teeth, with water-glass. Never required any chemicals to produce a hard model, while using good plaster and mixing to the right consistency.

G. A. Englert.

I use liquid silic if no special strength is necessary. Where strength is desired, I usually use oxyphosphate, mixed very thin, giving time to harden. I know of no way to produce hard models with chemicals.

G. E. Esterly.

Cut as heavy a groove on back of model as possible without weakening; put broken pieces together with gum-sandarac varnish, and fill groove with liquid plaster. Have never had one break the second time. Have never tried chemicals for producing hard models. If the plaster is well mixed and of rather thick consistency, I find the cast sufficiently hard. Have never had any trouble caused by expansion of plaster. If I had, should think it was due to carelessness.

J. P. Root.

Question 22. *A lady has a lower third molar that began to erupt four years ago. In the center of crown is a large cavity; only the anterior half of crown is in sight. Should the tooth be extracted?*

Yes.

R. L. Hays.

Ordinarily, the tooth should be extracted. Under some conditions a conservative treatment might be indicated.

G. E. Esterly.

Judging from description, the tooth is ill-shaped and poorly-erupted, and I think, under the circumstances, I should extract it.

G. A. Englert.

If the first and second molars are in place, and not decayed, I would extract; but if the second molar is badly decayed, I would extract it, expecting the third molar to move forward.

H. W. Le Fevre.

Several questions would have to be taken into consideration, to know if the tooth would be of service, when fully erupted, to pay for trouble; the condition of adjoining teeth, and the position of roots. I should judge a tooth that length of time in erupting would hardly be worth filling.

J. P. Root.

QUERY: *Are there any definite symptoms observable either in the tooth, gums, or adjacent parts, by which we may be able positively to diagnosticate cementosis before extraction?*

The disease has no pathognomonic symptoms; its expressions are as various as its causes are numerous. One of the most prominent symptoms is facial neuralgia, but that is not constant. Many cases present without any neuralgic complication. The pathology of the disease is little known, and its diagnosis, previous to extraction, uncertain and difficult, if not absolutely impossible.

W. X. Sudduth, Minneapolis, Minn.

There are no diagnostic signs by which we may certainly detect excementosis. We may say unhesitatingly that certain conditions stimulate its development, and that it is accompanied with certain other abnormalities; but these latter may exist either with or without excementosis being present; so that they are not unmistakable signs of its development. For instance, a tooth un-apposed or mal apposed for some time has invariably an abnormal development of cementum as a result of this occlusion or mal-occlusion; so also a tooth with a remotely devitalized pulp is frequently in the same condition. We may also add that any, either local or constitutional condition, which will induce chronic pericementitis will induce excementosis. Locally a congested and slightly tumified gum, this latter varying much with different constitutions; a soreness or responsiveness in the tooth from pressure or tapping with steel instrument. Sometimes a slight vibration of the tooth perceptible when seizing it in the fingers and pressing with slight force. Constitutionally and systemically facial neuralgia manifested in any locality to which filaments of the nerve may be distributed, radiating, or otherwise from the affected tooth. But all of these manifestations, both local and general, may result from or be expressions of other disorders than excementosis.

C. N. Pierce, Philadelphia, Pa.

I have nothing of practical significance to add to the paragraph treating of the subject of your query, as found on page 1160 of the last edition of the System of Oral Surgery. The chapter at large discourses the subject from a general standpoint.

J. E. Garretson, Philadelphia, Pa.

For Our Patients.

AN OLD MAN'S UNIQUE EXPERIENCE WITH FOOT-PADS.

What is doubtless the most unique case of garroting on record in the civilized world, took place in a disreputable quarter of San Francisco.

A distinguished-looking, well-dressed old man, with blood stains on his snow-white whiskers, entered the Receiving Hospital and said he had been sand-bagged. He said two men struck him from behind, dragged him into a dark alley, and, with a pair of forceps, pulled \$140 worth of gold teeth and fillings from his jaws, and then turned him loose.

The old man, who was slightly under the influence of liquor, had the appearance of a well-to-do business man. He declined to give his name or residence, or the name of the street where the assault took place. From this it would appear he had been frequenting some questionable locality and did not want to compromise himself. All he wanted was to find out if his jaws were all right. They pained him considerably, he said, and if the most serious part was the loss of the gold teeth he could easily replace them.

A doctor examined his jaws and found them bleeding in several places, but as the teeth had been riveted to the stumps of his natural grinders, their unceremonious extraction had been attended with but little damage to the jaws.

"They got eleven solid gold teeth," remarked the old man, after rinsing his mouth with a glass of cold water, "but that's nothing. The robbers will probably realize about one-sixth of what I paid to have them put in; and, if they are satisfied, I guess I am."

He smiled with a grim sort of humor as he said this, and seemed to look on the remarkable manner in which he had been robbed as a huge joke.

"The first thing I knew," he continued, "I received a blow on the back of the neck which partly stunned me. I was then dragged into a dark place, and, while one of the men held my head, the other sat on my stomach, with his feet braced in my arm-pits, and applied the forceps. He handled the tool in a very dextrous manner, and had the gold out of my mouth before I realized what was going on.

They also took my watch and what money I had; but I don't mind that so long as I am not injured."

The old gentleman wanted all hands to go out and have a drink with him; but he was induced to go home, on the assurance that he had enough for one night.

From the experience of this old man, it would seem that the onward and upward march of dental science has opened a new field for the enterprising foot-pad.

CUT IT SHORT.—If it is unnecessary to say a thing, why say it?

"It is altogether needless to enter on any argument to sustain this proposition," says the learned judge, and forthwith enters on one of great length and intense dullness.

"I deem it entirely unnecessary to combat the gentleman's views," says the orator, and, so saying, goes on to combat them till some rude person cries "rats!"

"I will not stop to enlarge," observes the preacher, and then he stops, and enlarge is no name for it.

"It goes without saying," remarks the editor, and then, for fear it will not go, says it over and over again for a column or two.

"Tell me not in mournful numbers," sings the poet, and straightway informs himself in many unhilarious stanzas of the very things he did not want to know.

What is the necessity, the cruel necessity, for the unnecessary thing?

TEETH TAKEN FROM DIFFERENT PARTS OF THE BODY.

A most remarkable story comes from Middletown, Orange county, N. Y. A maiden lady at that place, on the 5th of January, 1869, swallowed a new set of false teeth, which became separated from the rubber mold in which they had been set, while masticating her food. Before she could eject the food from her mouth, the teeth had gone down into her stomach. The family physician was summoned, but all his efforts were unavailing. The teeth caused her no discomfort, and in a short time the matter was entirely forgotten. A few days ago Miss Cole, the lady in question, felt a sharp pain near her left shoulder, and, on examining the spot, found what appeared like a wen under the skin. With the aid of a penknife she extracted a hard substance, which proved to be a

tooth. She was at a loss to know how the tooth came to be in such an unusual spot till she suddenly recollected that she had, twelve years ago, swallowed her set of teeth. During the past four weeks the lady has been cutting teeth all over her body, and had, at last accounts, recovered twelve of the fourteen teeth that had formerly constituted her full set. She is anxiously awaiting the arrival of the other two. She has placed the teeth in a glass case, and will keep them as mementoes.

HOW THE NEWSPAPERS PUT IT.

“‘How long do false teeth wear?’ an experienced dentist was asked the other day.

“‘You might as well say, “How long does a suit of clothes wear?” was the reply. It all depends on the quality of the teeth and the care of the person who uses them. If a woman bites thread with her artificial teeth they are likely to be ruined in a week. On the other hand, I know of persons who have worn the same set for twenty years without repair. Sets made of the best material and in the best manner, should last a long time with proper care.’

“‘What is the proper care of them?’

“‘The denture should be removed from the mouth and cleansed every night and morning.’

“‘Do artificial teeth decay?’

“‘No. They are made of porcelain, which is not subject to decay as the natural bone is. But porcelain is more brittle than bone, and hence, an artificial tooth will not stand many hard knocks.”

“‘What is the difference in the durability of high priced and cheap teeth?’

“‘That is a difficult question. Cheap teeth are made of a material that bears the same relation to that of the best teeth that a common stone china plate does to a Sevres vase. Cheap teeth look like glazed china, and that is about all that some of them are. Now, as long as the glaze lasts, the teeth are as strong as those made of the costliest material, and I have known a set costing next to nothing to perform service for many years. They are not quite so brittle, in fact, as those made of the finest porcelain. But the chief superiority of the latter lies in their shape and appearance, and in the exactitude with which they are fitted to the gums.’

“‘What is the best sort of plate?’

“‘One made of gold. But black rubber is just about as durable, only it is harder to keep clean.’

“‘Are complete sets of artificial teeth not uncommon?’

“‘Partial sets are more frequently seen, but full sets are by no means unusual.’

“‘Who wear the most false teeth, men or women?’

“‘Women, by long odds. I don’t think the result is due alone to vanity, however, though that may have something to do with it. The chief reason is, that the natural teeth of women are not as good and strong of those of men, and, therefore, have to be more frequently replaced by artificial teeth, and women are more loath to go toothless; and in the art of getting used to artificial teeth, women excel. They have more patience and skill of manipulation.’”

—*Boston Herald.*

A DENTIST’S VALUABLE PARROT.

A Wilkesbarre, Pa., despatch to the *New York Sun*, says: At the Albany Dental Rooms, in this city, they have a parrot who greatly assists in the work of extracting teeth. The parrot’s name is “Cæsar.” He is a fine specimen of his species, his intelligence being something marvelous. Dr. Weller, who has charge of the rooms, says he would not part with the bird for any money. And no wonder; the parrot brings grist to his mill. The bird does its work this way.

A man comes to have his tooth pulled. He gets into the chair, and then his courage fails him. He tells the dentist that the pain has gone away, and that he will postpone the operation till the next day. In nine cases out of ten the dentist is unable to persuade the patient that it will be to his bodily comfort to have the molar extracted. Then, when the man gets up out of his chair, the parrot, who has been watching him all the time, takes him in charge.

“Oh, coward,” yells the parrot; “you haven’t the nerve of a chicken.”

The man looks around in consternation. The parrot is partly hidden in his big cage behind a screen. The man with the tooth-ache turn around to the knight of the forceps and inquires:

“What remarks were those you just made?”

“I said nothing,” replies the dentist. “It was the parrot who was speaking.”

The gentleman was then introduced to the parrot. A pleasing conversation ensues:

“Nice morning,” says the parrot; “tooth pulled? No! You

better; you catch cold when you go out; better have it out and be done with it; lots people had teeth pulled this morning."

The man with the toothache is so dumbfounded over the parrot's talk that he hardly knows which way to turn for the time being. Then the parrot urges him on again:

"Go on; it will only take a minute; the doctor is waiting for you."

This is too much for the man. He goes back to the chair and has the tooth removed. Then the parrot jumps all around his cage and says, "Oh, ain't I happy; I feel so happy with my big tooth out." "That parrot," says the dentist, "can talk anybody into getting a tooth pulled. We had a farmer in the other day. He wanted all his teeth taken out and a new set made. We wanted him to take gas. The old man said: 'Well now, by gosh, I don't know about that. I often heard of people blowing out gas and then dying; I don't think I will risk it.' 'Good boy,' shouted the parrot; 'sensible man; don't you take gas; just sit down there, and pulling your teeth will be just as easy as husking corn.' When the farmer looked around and saw the parrot he said: 'Well, I declare; why that bird talked like a man. I guess I'll take his advice and let you crack away at my chewers.' There was no trouble in pulling the old man's first two teeth, but when the third one came he jumped two feet in the chair. 'That was a nerve clincher,' said the parrot. 'It won't happen again; just keep nice and quiet now, and soon your teeth will be out.' This soothing advice had a calming effect on the farmer, and he sank back into the chair perfectly satisfied with what had taken place and what was to come. When the job was through the parrot said: 'Well done; there isn't one man in a thousand who could go through such an ordeal; you must have a wonderful constitution.' The farmer smiled, and said 'he guessed he had.'"

THE BACTERIA FAD.—SCIENCE GONE MAD IN THE HANDS OF ENTHUSIASTS.

These doctors are a wearisome lot, observes the *Milwaukee Sentinel*. If the world were foolish enough to attempt to follow all their suggestions and to avoid all that hygienic cranks declare to be dangerous, living would be impossible, except under conditions that would make living intolerable. The latest fad, next to the disposition of surgeons to extirpate all the important organs of the body, is to find bacteria everywhere, and to warn people

against doing, for fear of bacteria, what it is necessary to do to get along at all. A Buffalo doctor has found nothing better to occupy his time, or no better way to advertise himself, than to examine, under the microscope, the straps in the street-cars by which unhappy wretches maintain an upright position when the cars are crowded. He finds these straps "fairly reeking with bacteria." This is a strange use of the word reek. We might as well speak of the atmosphere as reeking with birds. Reeking means steaming or smoking. Bacteria have just as much right to be everywhere as birds and butterflies have to fly in the air, and they are, for the most part, as harmless. The idea the doctors seek to convey is that where there is microscopic life there is danger to health. If there is a space on earth where microscopic life does not exist, man cannot exist on that spot. The air we breathe, the water we drink, is full of harmless and healthful animalcule, and would not otherwise be life-sustaining.

We are warned against sneezing, excepting into a bacterium-receiver, for fear of letting loose into the air destructive bacteria to attack the nasal membranes of other folks. We are warned against receiving money—hard money or paper money—without first putting it through a disinfecting process. We are told to go through the world with a strainer over the nose and the mouth, with carbolized gloves, and so on. In short, if we are to stand any show of living to a reasonable age, we are to shut ourselves up in gauze saturated with disinfecting preparations, drink distilled water, abstain from everything we like, and have no other concern in the world than the care of health.

There are reasonable sanitary rules based on a few facts of observation that are worthy of serious attention. They are not attended to ordinarily, because hygienic cranks urge so many ridiculous and impossible rules, and so constantly shocking the common sense of mankind. To ask a rational being to refrain from grasping a friend's hand for fear of bacteria, to deny himself the pleasure of osculation, and all that, is too much. If these doctors persist in pointing out microscopic life wherever they find it, the thing is to recognize the fact these microbes are edible and wholesome—raw, fried, stewed, baked, or in any other form. We are made up—all of us and in every part of us—of microscopic organisms. A man is simply a collection of such organisms, every minute particle of his being having an independent life. There is nothing to be frightened at. Bacteria have been in the world a good while, and enough people have managed to live to make it a pretty active world.

Current Notes and Items.

Some one calls a dental journal a mouth organ.

Happiness is the legitimate fruit of goodness, but we cannot make it the tree.

The Review, after giving Dr. Kirk a well-merited compliment, as successor of the late Dr. White as editor of the *Cosmos*, says the compliment is the words of *salve*.

A Russian remedy for diarrhea is an infusion of the petals of the red rose, drank by the tumblerful two or three times a day, or in smaller doses for young children.

Dr. Wilder was out of his office a few minutes Monday, and on his return found a man standing by the dental chair, with a pair of bloody forceps in his hand. On investigation the doctor found the man had abstracted two large double teeth for himself, while waiting.

Dentists are often asked questions that belong more to the medical than the dental profession. One may be, "What is good for the poisoning by ivy or poison oak (*rhus tox.*)?" Nothing is better than tansy used locally, and as a tea. It is the best antidote known.

Camphor is prepared by boiling the chopped branches of the camphor-tree in water. It is mainly produced in the island of Formosa. Inasmuch as it grows well in the Southern States, there is reason to believe that the preparation of camphor will some day become a profitable industry in this country.

The New York *Medical Journal* questions the wisdom of supplying artificial teeth in old age, suggesting that the design and adaptation of nature may be analogous in toothless old age and infancy alike; namely, for the use of bland and partly pre-assimilated food. But is the decay of teeth, like their first deficiency, an indication of Nature's design? or is it a morbid consequence of abuse and neglect? We know of no evidence that healthy teeth ever fall out from age, after the shedding of the first set, or were not intended to last as long as any other organ of the body.

A Cincinnati dentist pulls teeth by electricity. A more interesting dose of lightning for half a dollar is hardly conceivable.

Gutta-percha has become so scarce there is not enough for the insulation of submarine cables, and either fresh sources of supply or a substitute for it must be discovered.

The Marquis of Salisbury not only uses the water-power on his estate for lighting by electricity, but also grinds his corn, cuts his horse fodder, pumps his water, and does a variety of other work by means of electric motors thus driven.

If the statements of the London electrical engineers are correct, the new Australian telephone, known as the Collier Audible Telephone, marks a distinct step in advance in the science of telephony. It is asserted that, compared with the efficiency of an ordinary Bell receiver, the sound from the Collier is as a person shouting is to a whisper.

Two recent deaths from chloroform direct attention anew to the various methods of resuscitation when dangerous symptoms appear. Of these methods, none seems more promising than that in which nitrite of amyl is used. Dr. F. A. Burrall, of New York, believes that there is an essential antagonism between this drug and chloroform, and, in a letter to the *Medical Record*, refers to ten instances in which life was doubtless saved by the amyl.

Indiana has a girl, twenty-two years old, who has been since birth as helpless as a babe, having no power or motion, except a perpendicular movement of her jaws, and able to take nourishment only in liquid form. She has grown to be very beautiful, with perfect form, except slight curvature of spine. With her teeth she has learned to make and form all kinds of letters and sentences as perfect as print; also, all kinds of animals and images. This is her sole amusement.

A correspondent of the *Washington Star*, who has been studying the subject of getting rid of fleas, gives this as the result of his investigations: "If those who are troubled with this insect will place the common adhesive fly-paper on the floors of the rooms infested, with a small piece of fresh meat in the center of each sheet, they will find that the fleas will jump toward the meat and adhere to the paper. I completely rid a badly-infested house in two nights by this means."

Rubber can be dissolved more readily by adding from five to fifteen per cent of oil eucalyptus to the benzol or carbon bisulphide used; in the latter proportions, the mixture of carbon bisulphide will dissolve nearly twenty per cent of rubber.

Tape-worms must go, if there is any truth in discovery. The latest in the host of expellants is the nicest, being nothing worse than the ripe pineapple. People who like pineapples can try it, at a venture.

It is believed that ordinarily pearls are formed by the deposit of a secretion of the mollusk around a particle of sand, or other foreign body which has found lodgment within its shell, but instances have been known where very small fishes have got into an oyster, and have been enveloped in a beautiful nacreous covering, being thus transformed into pearls themselves.

Phenocoll hydrochlorate, the new antipyretic, is distinguished by its ready solubility in water. It claims for itself an antipyretic, anti-rheumatic, and anti-nervine action. From the evident interest of qualified observers and leading therapeutists in Germany, France, England, and America, it is reasonable to deduct that the new remedy has extraordinary merit, and that it will assume prominent rank.

Hot air registers in floors are unhealthy and dangerous. Combustibles, dirt, and animal substances, living or dead, are always falling into them; and we are told that there are expectorators who will fall back on them for a target in the absence of a hot stove. A better atomizer for the diffusion of tubercular and other deadly germs throughout the atmosphere of a room or public hall could not be devised than this kind of receptacle, with its active emission of heated air. The register should always be placed in the wall, and if in the floor should be removed.

Charles H. Spurgeon is a prolific writer and an indomitable worker. For twenty years he has published homely calendars or almanacs, to be hung up in kitchen or work-shop. The publication has been known as "John Plowman's Almanac." In a good-sized volume are now collected these proverbs, or grains of salt, and *The Salt-cellars* are the receptacles of many wise sayings, accompanied by homely applications. Aphorisms and epigrams are of great use in pointing a moral or adorning a tale, and here they may be found ready to hand.

Among the numerous electrical applications introduced of late into steamboats is a winch, designed for light, variable cargoes, the aim being to attain great rapidity of lift with simplicity. So effective is this machine, that it will work while immersed in sea water. The motor is inclosed in a stout casing, and has steel-cased coils.

Mr. Merrifield, a British officer in Tenasserim, says that the belief that the teeth of the Malays and Siamese are colored by chewing betel mixed with lime is an error. "The black color is produced by a special process employed for the purpose, for no respectable Siamese would like to have white dogs' teeth like Chinese, Indians and Europeans. Cocoanut kernel is carefully charred, and then worked to a stiff paste with cocoanut oil. When carefully and regularly worked over the teeth, this produces the black varnish which is so much admired. Among some Malay tribes it is considered the proper thing not only to blacken the teeth, but to file them down to points like sharks' teeth."

It is a rare thing for a human being to have three sets of teeth, and seldom that a baby is born with teeth; but a growth of teeth after death is perhaps the most odd of all such freaks. A case of this kind is reported from Cincinnati. On Tuesday last, the body of Mrs. Catharine Davis was exhumed for removal. She died in 1852, aged thirty-nine years. She had been entirely destitute of teeth for several years before her death. The coffin, when opened, revealed the features in a perfect state of preservation. But beyond this, and much more to the astonishment of the assembled relatives, the half-open mouth seemed almost smiling with a full and nearly perfect set of teeth of quite an inch in length.

Some one says if soda is added to fruit pies it will require less sugar to make them palatable. Of course a little soda would neutralize a portion of the acid contained in the fruit, but the chemical only disappears as an alkali to reappear as a salt, and the salt is harmful to the digestive organs. The stomach contains, during digestion, an acid equivalent to one dram of hydrochloric acid, though no human chemist can manufacture that which is of the precise quality of compound. When alkalies are taken into the stomach, they serve to break up this acid combination, important as a digestive fluid, and so the process of digestion is delayed. Anything which slows digestion or weakens the gastric juice, is injurious, and decomposition results. Thus all alkaline substances—baking powder, soda, saleratus, and the like—are deleterious.

Lucre has smiled on the explorers in the field of electrical science, says the St. Louis *Globe-Democrat*. No scientific body in the country has so many millionaires as the American Institute of Electrical Engineers. At the top of the list is Alexander Graham Bell, whose profits on the telephone are represented by eight figures. Next comes Edison, with a seven figure fortune. Brush, of electric light fame, and Elihu Thomson, whose financial future is, perhaps, brighter than any of the others now, are more than millionaires. Frank J. Sprague was a junior officer in the United States navy six years ago. He is now living in the mansion which was built for the Grants. His company sold out to the Edison Company for \$1,000,000, and half of it went to the inventor. Franklin L. Pope, of New York, and a score of others, have independent fortunes. Most of these men were telegraph operators, and most of them began their experimenting and study without a dollar.

Dr. R. Matthews, of Wichita, is remarkably successful in treating and filling dead roots. He uses gutta-percha points, dipt in chloroform, after the root is thoroughly cleansed. He says, in the *Western Dental Journal's* report of the Kansas Dental Association: I destroy pulps and take them out as soon as I can. I had a case where a lady came and wanted to have two teeth filled by the next day. I didn't wait, but filled them at once with gutta-percha. I use those points which are made for that purpose with a platina-pointed top, and a drop of chloroform; push them in the channel as far as I can, till the point is blunt or the opposite gutta-percha will flow out. Then I cut off the surplus ends and fill over with cement. If the tooth has an abscess, I regard careful cleaning as the chief factor. I use peroxide of hydrogen, but I am growing more careless every day about medication, and regard cleaning as the important factor. Very few get sore after the cause which made them sore is removed. I stop up with gutta-percha, and, when the tooth is dry, it makes a tight filling. In teeth that are likely to give pain by being filled, if they don't pain in a day or two, they are ready to be filled.

Instead of taking a broach with cotton wrapt around it for a swab, I have a method few men use, and why I can't understand. I take tissue paper and wrap it into little cones that represent the gutta-percha cones. I have hundreds ready-made. Put that in the tooth and it absorbs all the water, and is so fine—finer than a steel instrument. You can see by its action if there

is water there. I use that for drying the teeth. It has no tendency to force particles through itself. When dried as well as the paper will dry it, I dry it with a hot air syringe.

John J. Egan, of Portland, Maine, a young man about 22 years of age, recently had a tooth extracted; when he returned home, he complained of feeling dull and sleepy, and lay down on his bed. He continued to sleep till after midnight, when the family, beginning to feel alarmed, thought best to awaken him. Their efforts to arouse him were unavailing, and a physician was summoned; the young man was beyond medical aid, and died, about six o'clock the following morning, without having once regained consciousness. There was no ether or gas used in extracting the tooth, and no intoxicating liquor drank by the young man during the day. The medical theories that account for the death are, that it was caused by coagulation of blood in an artery, or by some active poison not known.

In the town of Guilford, Maine, last winter, between 10 and 11 o'clock, A. M., a man about 62 years old, in fair health, took a pint and a half of whisky to fortify himself in having a dozen teeth extracted. Soon after the operation, which he said gave but little pain, he passed into a lethargic sleep. This gave no uneasiness at the time, as it was what was likely to occur after heavy drinking; but later, attempts to arouse him proved futile, and he died, without regaining consciousness, about 4 o'clock next morning, probably of acute alcohol poisoning.

Trade schools are doing a great good. They give a young man, in a few months, instruction that it would take the same number of years to "pick up" haphazard in a shop; and accompanies this instruction with a technical and scientific teaching of the whys and wherefores of work that the shop seldom, or never, furnishes. At the same time, it enables the student to reach the stage at which he attains a value as a mechanic much earlier than if he went into a shop as a boy. He can commence with the trade schools in his seventeenth or eighteenth year, and on completing his trade school course, would be just as far as the shop boy, with the incalculable advantage, if he has wisely used his time, of possessing the foundation for an education that will ever help him.

Editorial.

SAVE THE THIRD MOLAR.

Some dentists sacrifice this tooth for slight cause. Even before it makes its appearance they want to get it out of the way. Others who are anxious to save it, would sacrifice the second or first molar—especially if much decayed—to give it room. We think this the other extreme. Save the first and second molars by all means. But generally you can save the third molars also, in spite of the crowded condition. How often even temporary teeth are extracted, and some times the first molar, almost as soon as it is well developed, or at any rate, as soon as it is much decayed, “to make room.” Do you think nature is blind to this necessity for room? Does she not sometimes crowd these teeth for the purpose of making room? How often both with the third and fourth molar we thwart nature’s effort to give a well-developed jaw by our interference. Many of our narrow half-developed jaws are caused by the extraction of teeth, just when nature is hard at work changing the expressionless child to those noble outlines to the features, and strong, broad jaws—the manliness of mature age. Give nature a chance, and she will generally make space enough for all the teeth as fast as they are ready to take their proper place.

The plea that if the first molar is sacrificed, the second molar will crowd forward to take its place, at least when the third molar appears, is as often false as true. I am now sixty-five years old, and though I was told in my teens that the first molars were not very important, that the back molars would gradually take their place, the space of the first molars I then lost is still there, though the wisdom teeth, back of these spaces that I was told I should lose almost as soon as they appeared, are yet there. Save the wisdom teeth, save the first molars, save all the teeth. We are glad this is becoming more and more the motto and practice of intelligent, skilful dentists. But especially make it your endeavor to save the frail teeth. Do you not know it is often the sickly person that lives the longest? Special care lengthens life, while the robust careless fall by the way. So frequently it is with our teeth.

NECESSITY FOR LEISURE AND PLEASURE.

We should welcome hours of leisure. They are important to a busy man; and the more busy, the more important. They should be enjoyed as a luxury. Though they often come unwelcomed, we could hardly get along without them. Even rainy days, and other days that keep patients away, are the secret of many a dentist's success; though, of course, if we smoke and dream and yawn them away in slipshod senseless vacuity, or use them in debauching our morals and weakening our energies, they become our destruction.

First. An intelligent dentist will value his leisure hours of self-improvement, for he will never be through his professional reading, and be anxious to keep up with the times in general knowledge; yes, and his hard study and experimenting will never cease.

Second. Industrious men must have their vacations. To unbend and rest, at times, is essential to good work. When a physician, we were once called to a sick man who was really too busy to be sick.

"Now, doctor," said he, "you must get me out of this as quickly as possible. I cannot stay here a day longer than absolutely necessary. How soon can you get me up?"

"In three days," we answered; "but it will not be one day less than three weeks."

"Doctor," he replied, "I don't understand you, and I don't care to. If you can get me up in three days, I must persist in your doing so."

"Johnson," I replied, "this sickness is the result of continued and persistent overwork, and you ought to be thankful for this enforced rest. It must be rest or death."

So it is with many busy men. If they will take no voluntary rest, the system will demand enforced rest, though it comes through sickness.

Third. But a man with an absorbing vocation must not only have his vacation but his avocation. A side show may be rest to a busy man though it be absorbing labor. Many a man finds him-

self exhausted, not so much from overwork as from monotony of work. He lives in a tread-mill; and if he does not occasionally get out of it, and out of himself, and do something he can play at, he will prematurely die, or become imbecile, which is worse. This side show need not be nonsense, extravagance or dissipation. It may be something really profitable; at least it should relieve the faculties usually engaged, and arouse those usually dormant.

If a man throws off the weight of his ordinary business for a few hours of the twenty-four, and engages in something entirely different, he will find that even labor is rest. He can work twelve or fourteen hours a day in this way better than ten hours at one thing, especially if his avocation takes him out of the office, though, of course, not in office hours.

Fourth. Giving himself up to innocent enjoyment is better than medicine. A romp with the children, a laugh with good company, a play in the fields, a dozen similar recreations, are the life of life. They are really re-creations.

We are not the creatures of accident, or of fatuity, or of mere surroundings. Our mental and moral growth, our brawn and maturity, our happiness and success, are largely in our own hands. Defects, obstacles and apparent impossibilities raise, strengthen and establish the determined. It is not the money we have, or the friends, or the opportunities, or even the natural gifts that determine our position in society. It is pluck, energy, inspiration, that tells.

Yes, our destiny is in our own hands, but it must be sent to our very finger tips to give skill, to our feet to give promptness, to our head to give discretion. It must be in our passions to give enthusiasm, in our spirits to give hope, and in our will to hold the reins.

Many a skilful man loses golden opportunities by lack of promptness; many a prompt man fails by lack of discretion; and many a shrewd man loses all by ungoverned passions.

WAKE UP, STEP UP, AND BE A SUCCESS.

Why be below par? Why always continue to be what you always have been? Why not be a man, a success?

Lazily moping along the dusty street, where the rude, jostling, multitude crowd and vex you, is not pleasant. Get ahead of them. There is plenty of room at the front; and there you will have every advantage the multitude are after. Trot ahead!

But to succeed you must have a steady tread, a single aim, a persistent pluck. There must be no loitering, playing with toys, gaping at baubles; no nonsense, dallying with improprieties, weakening yourself with dissipations.

Arouse yourself from sluggishness, thoughtlessness, and self-indulgences. Free yourself from every weight that hinders you, and crowd ahead. Be something distinctive, clean cut, ready-made. The world needs a few such, and will pay them well for their services. You may be one of them.

Off with your dusty clothes. Wash up, trim up, look up, and be a gentleman, a leader, and march near the music. Some of the people will soon drive up and give you a ride. The multitude will take off their hats and give you honor. By and by they will shower on you silver and gold, and call you a success; and this will ensure success.

A UNITED TOOTH.

Many queer things occur in nature. One that some would-be wise men say cannot be is a united tooth, especially if the tooth was broken so as evidently to have killed the nerve at the time of the accident. But we have just such a tooth now before us, sent in by Dr. W. C. Kerns, of Sidney, Ohio. "It is a lower-central incisor from the mouth of a lady, aged 35 years. This was broken off when a child." In the breaking, the neck of the tooth was forced into the root sufficiently to set it firmly; and there the two pieces became permanently cemented, though the life of the pulp could not have continued

THE REMEDIAL VIRTUES OF HOT WATER.

The virtues of copious drafts of hot water are not generally appreciated. Are you troubled with restlessness, wakefulness and irritability of nights? Drink freely of hot water just before retiring. Two or three tumblersful will not hurt you. Is there constipation and consequent headache, dullness and low spirits? Two tumblersful, two hours apart, is a harmless, charming antidote. In indigestion, flatulence and sour stomach, it is excellent. In fever, frequent drafts act like magic; you can hardly go to excess. For an emetic there is, perhaps, nothing better. In a desperate case of fever, when an emetic was desirable, I drank fourteen pints before I vomited, though I perspired wonderfully all over. I drank twenty-one pints in all. It was the most thorough and effectual emetic I ever took. In cholic, diarrhea, and dysentery it is often effectual, especially if a little soda is added to the hot water. In our "yarb" teas, it is the hot water more than the herbs that do the good.

Show me a slovenly, unprofessional dentist, and I will describe the character of his work, instruments, office, habits, and general surroundings. And by law of association, what he is, so will be his patients and his income.

Get out of your dirty clothes and wash up. Look, talk, act, live like a respectable dentist, and you will attract respectable patrons. The best advertisement a dentist can have is himself. People are generally what they appear to be.

A cavity to be filled with gold is sometimes varnished with a thin coat of Canada balsam dissolved in chloroform. Some think this is better than retaining pits; and, also, that it effectually closes the pores of the dentine from moisture, and makes a more water-proof filling.